



**THE JUVENILE OBESITY
EPIDEMIC: STRIKE BACK
WITH PHYSICAL
ACTIVITY**

**Motivación hacia la práctica
físico-deportiva de los
corredores de fondo.**

**BASQUE RUNNERS IN THE NEW
WORLD**

Stretching, Why should I?

**CIFRAS SOBRE PRECIOS DE
ZAPATILLAS EN ESPAÑA (1982-
2007)**

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REVISTA DE REFLEXIÓN Y ANÁLISIS PARA EL CORREDOR

Editorial

Bienvenidos al número 5 de esta colección particular de artículos, aparentemente tan fácil pero de complicaciones cada vez mayores. Las revistas científicas están agrupadas bajo los paraguas de editoriales poderosas y la recopilación se hace, en algunos casos, cobrando incluso cuotas por publicar en entidades de prestigio.

El esfuerzo personal de IRRECUPERABLES lleva a épocas en las que la conversación con amigos sacan hilos de los que tirar y escribir, y a otras de sequía absoluta y de rastreo de fuentes, búsqueda de permisos de reproducción, etcétera. Este número de otoño apenas cuenta con material de casa, y tenéis tres lecturas para poner a funcionar vuestro inglés. A veces descorazona ver con la facilidad con la que se elaboran números de revistas comerciales, pero también reconforta ver como vamos por caminos separados y no importa que tengamos este ritmo tan descabado en esta redacción virtual que ahora visitas.

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Un saludo
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Motivación hacia la práctica físico-deportiva de los corredores de fondo

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Resumen

En este artículo se repasan las propuestas teóricas sobre la motivación para la práctica deportiva general y de los corredores de fondo en particular. Forma parte del trabajo doctoral del autor.

1.- Introducción; Definición, tipos y teorías de la motivación.

Dosil Díaz (2004, p. 129) hace una definición de la Motivación en el Deporte que trata de integrar a todas: "La motivación es una variable psicológica que mueve al individuo hacia la realización, orientación, mantenimiento y/o abandono de las actividades físicas/deportivas, y suele estar determinada por la asociación cognitiva que el sujeto hace de las diferentes situaciones (si es positiva, mayor motivación; si es negativa, menor motivación; si es neutra, dependerá de la construcción cognitiva que realice por la influencia del entorno y de sus propias convicciones), en función de una serie de factores (individuales, sociales, ambientales y culturales)".

Por otro lado, nos encontramos con que ante un mismo estímulo o situación, cada persona no responde o se motiva de la misma manera, lo que nos lleva a deducir que existen diferentes tipos de motivación, tanto en la vida como en el deporte, pues tendrían que explicar porqué se inician las personas en el deporte, como lo orientan en sus vidas, porqué lo siguen haciendo y por qué lo abandonan. De esta manera podemos distinguir:

a) Motivación Intrínseca y Extrínseca (Dosil Díaz, 2004); la primera hace referencia a aquellos deportistas que lo agradable de la propia actividad deportiva en si y el placer al realizarla y superarse a si mismos, son suficientes para mantenerles practicándola. La segunda se atribuye a deportistas que dependen mayormente de refuerzos externos para mantenerles haciendo su deporte, tales como becas, prestigio social, trofeos, mejora de la imagen, fama, complacer a familiares, etc. Mientras que la primera es más duradera, pues está controlada por auto-recompensas (disfrute, autosuperación, autorrealización...), la segunda es más inestable, pues varían siempre las recompensas. Carratala Sánchez (2004) explica un tercer estado en que los

atletas no están motivados ni intrínseca ni extrínsecamente, simplemente no están motivados, participando en su deporte sin propósito, experimentando efectos negativos como los de apatía, incompetencia, depresión, sin buscar ningún objetivo afectivo, social o material; es el estado de Amotivación.

b) Motivación orientada hacia el Ego y hacia la Tarea (Cervelló Gimeno, 1996); la primera se identifica con deportistas que les impulsa la competencia o competición contra otros, juzgando su nivel de competencia comparándose con los demás, y la segunda lo hace con los deportistas que su motivación depende de retos y resultados, pero no en comparación con los demás, sino consigo mismos, con el afán de autosuperación de dominio deportivo o marcas.

Gutiérrez Sanmartín (2000), concluye que las motivaciones orientadas al resultado, la del Ego o la Extrínseca, pueden hacer que la persona deje su deporte, puesto que otorgan a agentes externos no controlables por él un valor determinante para continuar. Sin embargo, estas motivaciones, suelen tener más peso a la hora de iniciarse en ese deporte, pero para mantenerse en su práctica es necesario que se empiece a producir un equilibrio entre ellas con las segundas; la Extrínseca y la Orientada hacia la Tarea.

Son muchísimos los autores que han tratado de manera seria la motivación tanto a nivel general como a nivel deportivo: Cervelló Gimeno (1996), Weinberg y Gould (1996), Bandura (1998), Duda (2001), Dosil Díaz (2004), Gómez López (2005), Moreno Murcia y Martínez Camacho (2006), etc., y todos ellos, tanto en psicología general como en el ámbito de la actividad física y el deporte, han hecho una búsqueda continua de la teoría "correcta" que pudiese explicar el rango de conductas de ejecución de los sujetos. Sin embargo, en la actualidad, la que parece estar más "de moda" o ser "más comúnmente aceptada" es la de la Autodeterminación, que viene a

exponer que el deportista tiene la necesidad de sentirse competente en la actividad que realiza, de ahí que, cuando no existe esta percepción, la motivación intrínseca disminuye y se produce desmotivación. En los últimos años, se ha desarrollado el modelo jerárquico de la motivación intrínseca y extrínseca que hace referencia a la existencia de tres niveles de generalidad en los que interactúan estos tipos de motivación, explicando el porqué un deportista está motivado intrínsecamente, extrínsecamente o desmotivado:

-Nivel global (personalidad-rasgo); hace referencia a una orientación motivacional general que depende de los rasgos de la personalidad de cada persona, que explican que en cada deportista predomine la Motivación Intrínseca, Extrínseca o la Amotivación.

-Nivel contextual (vida cotidiana); hace referencia a aquella orientación motivacional que tiene cada deportista en función de los diversos contextos donde lleva a cabo su práctica (familiar, deportivo, escolar...).

-Nivel situacional (estado); hace referencia a una u otra motivación en función de la situación en la que se encuentre (entrenamiento grupal o individual, en el lugar de entrenamiento o en la pista de competición...).

De esta manera, a partir de la distinción de los tres tipos de motivación y de los niveles en que se presentan, esta teoría identifica los mecanismos que subyacen a los cambios motivacionales del deportista, teniendo en cuenta los diferentes factores que están presentes y prediciendo consecuencias positivas o negativas que ello pueda conllevar en la actividad deportiva.

2.- Motivos de inicio, mantenimiento y abandono de la actividad físico-deportiva.

Son numerosos los estudios que han tratado los motivos de inicio a la actividad deportiva, los de su permanencia y los de su abandono, tanto en la población en general como en poblaciones muy concretas. En la población en general destacan los estudios de Sánchez Bañuelos (1996), Cervelló Gimeno (1996), Weinberg y Gould (1996), García Ferrando (1996 y 2001), Dosil Díaz (2004), y suelen coincidir en que los principales motivos de inicio en la práctica de actividad físico-deportiva son los relacionados con la salud, para luego ir cobrando más importancia en el mantenimiento de la práctica los motivos relacionados con la diversión de la tarea

en si, el bienestar que les produce, el encuentro con los amigos y la búsqueda de estética (tabla 1).

Motivos para la práctica deportiva	2000	1995	1990	1985	1980
Por hacer ejercicio físico	58%	52%	58%	65%	58%
Por diversión y pasar el tiempo	44%	44%	46%	52%	51%
Porque le gusta el deporte	34%	37%	40%	53%	47%
Por mantener y/o mejorar la salud	27%	26%	-	-	-
Por encontrarse con amigos	24%	21%	28%	28%	25%
Por mantener la línea	13%	14%	15%	28%	15%
Por evasión	8%	10%	8%	14%	14%
Porque le gusta competir	4%	4%	4%	7%	-

Tabla 1. Evolución motivos de práctica deportiva en la población española. Tomada de García Ferrando (2001)

Por otra parte, la falta de tiempo y no gustarle el deporte son los principales motivos de abandono deportivo. También el cansancio de la actividad laboral, la precariedad y la lejanía de las instalaciones (tabla 2). Sin embargo, las causas por la edad varían con el paso de los años, lo que denota una mayor y mejor o menor y peor oferta deportiva para estos colectivos, aduciendo estos el miedo a las lesiones como principal causa de abandono.

Motivos abandono práctica deportiva	2000	1995	1990	1985	1980
Falta de tiempo	45%	53%	54%	58%	42%
No le gusta	39%	35%	26%	29%	23%
Por la edad	32%	26%	30%	28%	41%
Por pereza	21%	20%	19%	-	-
Cansado trabajo/estudio	15%	13%	16%	22%	8%
No le enseñaron en Colegio	8%	13%	11%	17%	14%
Por la salud	15%	12%	11%	12%	14%
No le ve utilidad/beneficios	8%	8%	5%	2%	3%
No hay instalaciones cerca	5%	7%	8%	9%	-
No instalaciones adecuadas	2%	1%	6%	7%	6%

Tabla 2. Evolución motivos de abandono deportivo en la población española. Tomada de García Ferrando (2001)

Además, Weinberg y Gould (1996) subrayan que una de las variables básicas para explicar el abandono deportivo es la percepción de la habilidad personal, definida por los éxitos y fracasos en los entrenamientos y competiciones. A partir de esto surgen las teorías del Burnout o Síndrome del

Quemado y la de Overtraining o Sobreentrenamiento.

3. La Motivación del corredor de fondo.

El tema de la motivación específica de los corredores de fondo ha sido tratado también por numerosos autores (tabla 3). Entre todos ellos, bajo nuestro punto de vista, destaca Jaenes Sánchez (2000), el cual hizo un estudio en España con una población muy amplia: los corredores de las maratones de diferentes años de las ciudades de Sevilla, Valencia, Jerez, Madrid y San Sebastián, para así contemplar longitudinalmente las maratones más populares de todos los extremos de nuestra geografía. Los corredores debían tener más de 18 años y marcas superiores a 2h 11', para no ser catalogados como élite.

Como instrumento utilizó unas adaptaciones convenientemente validadas por psicólogos muy expertos de traducciones de los cuestionarios SCAT y CSAI-2, con los que preguntaba sobre diferentes aspectos psicológicos del maratón, pero principalmente sobre la ansiedad precompetitiva. Uno de los temas que trató también es la motivación de estos corredores. Así, explica que algunos de los estudios llevados a cabo sobre los motivos para correr largas distancias, muestran que no hay un motivo único que lleve a las personas a la práctica de la carrera continua, y a muchas de ellas incluso a participar en algún maratón. Sin embargo, manifiesta que la mayoría de los encuestados aduce razones que tienen que ver con los beneficios que esperan obtener con la práctica, aunque otras razones como la influencia de familiares y amigos o mantenerse en forma, también tenían importancia para iniciarse, y los factores motivacionales derivados del entrenamiento y las sensaciones positivas que tenían, la tenían para mantenerse en la práctica. Añade que motivos como mejorar físicamente, sentirse bien y en forma, parecen ser los que predominan como motivos para correr en general. Sin embargo, para correr un maratón en particular, el desafío personal que supone y la satisfacción de lograr una mejoría en su tiempo previo, son los motivos que cobran más importancia.

AUTORES	Principales motivaciones para correr
Kjelsas & Augestad (2003)	Mejorar la salud Mejorar el estado físico Por placer Por mejorar del estrés Por mejorar la apariencia física Conocer gente
Barrios Duarte (2001)	Satisfacción personal Mejorar salud Mejorar la aptitud física

	Interés por la carrera continua
Rodríguez Guzmán & Díaz Cisneros (2000)	Por bienestar y salud Por afición al atletismo Por retos personales Por elementos afectivos y sociales
Jaenes Sánchez (1994)	Sentirse mejor Mejorar físicamente Encontrar amigos Perder peso

Tabla 3. Resumen de los principales motivos para correr.

Glover y Florence (1999), que además son corredores de fondo, elaboraron una lista de 19 "trucos para la motivación", es decir, las claves que ayudarán a mantener la motivación para entrenar y competir (tabla 4).

Nº	Trucos para Motivarse
1	Páselo bien
2	Corra con alguien
3	Involucre a su familia y amigos no corredores
4	Consiga un entrenador
5	Lea sobre correr
6	Vea competiciones en directo o por televisión
7	Llénese (rodéese) de estímulos mentales
8	Busque variedad en los entrenamientos
9	Quítese el reloj
10	Planee su temporada
11	Compita en distancias diferentes
12	Corra a menudo, pero no demasiado
13	Ajuste sus metas
14	Lleve un diario
15	Recompéñese a si mismo
16	Cambie de zapatillas
17	Adáptese al tiempo (climático)
18	Corra en lugares diferentes
19	Descanse de correr

Tabla 4. Trucos para mantenerse motivado para correr. Tomada de Glover y Florence (1999).

Podríamos hacer un análisis de cada uno de los trucos, pues todos son muy importantes a la hora de mantener la motivación para correr, pero unos más que otros según en qué momento y circunstancias. Sin embargo, nos quedamos con lo que consideramos clave: disfrutar de la carrera en si por diferentes paisajes cada día y olvidándose del reloj (rendimiento), es decir, incidir directamente en la motivación intrínseca, desde el punto de vista de los corredores de fondo.

Jaenes Sánchez (2000), hace también alusión a un término directamente relacionado con la motivación para seguir corriendo: la adicción a la carrera,

caracterizada por la aparición de síntomas de carácter psicológico y fisiológico que te impulsan a volver a correr tras 24-36 horas sin hacerlo. De esta manera, distingue entre dos conceptos, el de adicción positiva y el de adicción negativa a la carrera continua.

La primera viene dada por los efectos ocasionados por la práctica de la carrera continua (creemos que con motivación fundamentalmente intrínseca), es decir, bienestar, satisfacción, euforia, sensación de ser y hacer algo diferente, tener amigos con los que compartir los entrenamientos y competiciones, menores índices de depresiones, además de otros tales como pérdida de peso, estar en forma, encontrarse bien, etc. De hecho, según Jaenes Sánchez, parece ser que algunos especialistas han aprovechado estos efectos para recomendar la carrera continua como parte de un tratamiento a pacientes con agorafobia, psicoterapia, depresión o reducción de la ansiedad.

La segunda tiene que ver con los trastornos derivados de no correr durante un tiempo (creemos que con motivación fundamentalmente extrínseca u orientada al ego), ya sea por lesión, por trabajo, por falta de tiempo real..., es decir; ansiedad, incapacidad para descansar, incomodidad, culpabilidad, tensión, etc. Así, Jaenes Sánchez (1994), en un estudio que hizo en 108 competidores del Maratón Ciudad de Jerez de 1993, encontró datos alarmantes en sujetos que sufrían este tipo de adicción: personas que hacían de la carrera continua el eje central de su vida, de manera que un simple cambio en la hora de irse a entrenar (por el motivo que fuese) era muy mal tolerado, o personas que aún estando lesionadas o a medio curar, se empeñan en seguir entrenando y/o compitiendo, con el peligro para su integridad que ello conlleva.

Arribas, Bellido y Llanos (2007) dijeron que la adicción a la carrera viene determinada por factores fisiológicos (durante la carrera se liberan Serotonina y Beta-endorfina, responsable de la sensación de euforia al correr) y psicológicos (la carrera nos libera de estrés, enfados, frustraciones, hostilidad...).

Para mantenerse motivado en carrera, ya sea para mejorar la marca o para superar momentos de cansancio o aburrimiento, sin por ello disminuir notablemente el ritmo, también es conveniente reseñar dos estrategias: las de asociación y las de disociación (Jaenes Sánchez, 2000). Las primeras hacen referencia a correr centrándose en el propio cuerpo, en sus sensaciones, en controlar los tiempos de paso posibles u objetivo (calculados antes de la carrera), etc. Las segundas hacen referencia a correr "desconectando", es decir, pensando en sus actividades cotidianas, repasando experiencias de

sus vidas, en una reforma para su casa, en su pareja, en algo del trabajo, etc.

Jaenes Sánchez (2000) concluye que las estrategias de tipo asociativo ayudan a rendir mejor en competición y entrenamientos de series de ritmo preestablecido. Por el contrario, las estrategias de tipo disociativo, en nada ayudan a mejorar el rendimiento, aunque si son muy útiles para superar momentos críticos de gran cansancio en competición, o momentos de aburrimiento en entrenamientos en solitario de carrera continua sin ritmos establecidos. Es normal, por ello, que la mayor parte de los corredores "disocie" cuando entrena sólo.

Por su parte, Bueno, Capdevila y Fernández Castro (2002) comprobaron que los aspectos precompetitivos (ansiedad, estado de ánimo y autoeficacia) se relacionan poco con el rendimiento. Sin embargo, las percepciones de amenaza y los recursos de afrontamiento tienen un mayor valor explicativo de éste. Los resultados, puestos o marcas dan validez al concepto de sufrimiento competitivo, que aparece cuando el atleta tiene la certeza, mientras está compitiendo, de que no alcanzará el objetivo por el que está luchando.

Para concluir, parece claro que el perfil del "corredor ideal" es aquel que se inicia por motivos de salud, que se mantiene practicando la carrera por las sensaciones placenteras y beneficios que percibe, que se plantea unos retos exigentes pero asequibles sin obsesionarse por conseguirlos, que entrena y compite con amigos y/o familiares, que sabe parar a tiempo ante un aviso de lesión y no se obsesiona con volver a correr cuanto antes, que se cuida y no tarda demasiado en cambiar a otro buen par de zapatillas, que en competición corre por sensaciones, tratando de respetar los tiempos de paso calculados a priori con su entrenador, y que los agotadores "rodajes" largos de entrenamiento los hace por lugares bellos y variados, disfrutando del paisaje y charlando con los compañeros o pensando en "sus cosas" si ese día corre sólo.

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Basque runners in the New World

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Resumen

La llamada "Diáspora vasca" llevó a gentes de esta región a zonas de todo el mundo. Para los vascos emigrando de Francia y España en los siglos XIX y XX el destino principal fue Argentina. Descendientes de Euskadi copan ahora un 10% de la población argentina y sus nombres y apellidos revelan este origen, y a muchos deportistas con éstos se les ha otorgado el alias "el vasco".

- *Nota de la Redacción. Este artículo completa uno anterior de A.Milroy, disponible en la Red:"The Great Running Traditions of the Basques".*

1. Introduction

After several generations, Basque heritage is still strong in Argentina, with cultural centres in major cities. A major centre is in Buenos Aires with a cultural foundation, the Juan de Garay Institute, named after the city's Basque founder. My earlier article, The Great Running Traditions of the Basques, dealt with the Korrikalari runners. This article attempts to discover to what extent this tradition of distance running was carried abroad with the Basque Diaspora, particularly to Latin America. To put the material in the article into context, background on the development of distance running in South America is required.

In 1910 at the height of the Marathon Craze that followed Dorando Pietri's disqualification in the 1908 Olympic Games, the first international marathon was held in Buenos Aires. Dorando Pietri won this race in 2:38:48.2, with Antonio Cruz of Chile in second, 2:45:04 and Anibal Carraro of Argentina in third, 2:54:09. It was Chile and Argentina who were to dominate the early development of distance running in the continent. The Chilean runner Juan Jorquera took the 40.2km marathon in the first unofficial South American championships in 1918 in Buenos Aires, and then took both the 5 000 and 10 000 metres championships in the 1920 championships in Santiago, Chile.. In second place in the 10 000 metres, (33:13.6 to 33:18.2) was Manuel Jesus Plaza Reyes also of Chile. Plaza was to be the first real pioneer in South American distance running and brought the continent's distance runners to the attention of the world. In 1922, 1924, 1926 and 1927 he won the 3 000, 5 000 and 10 000 South American titles (1922 was unofficial) and also in that year took the marathon title was well – in 2:57. Such a sweep of distance titles in a regional championships is almost certainly unique. Plaza was just 20. Like other later major figures in South American distance running, he came from a

humble family but like them this gave him the drive to fight his way out of poverty.

The official South American Championships were held biannually. With a twenty day voyage to get to Europe, the main centre of distance running, these championships offered the only real chance of international experience for most Latin American athletes. Plaza was to take 6th place in the 1924 Olympics in Paris in 2:52:54 and then the silver medal in the 1928 Olympic Marathon The earliest Basque names to appear prominently in a distance running context was that of **Pedro Arancibia** also of Chile, who took the bronze medal in 3000 metres in the Unofficial South American championships in September 1922, the Campeonato Latino-Americano held Rio de Janeiro, and again the bronze in the 1927 official continental championships.

2. Jose Ribas

In Argentina the great pioneer, and another great runner of the 1920s was Jose Ribas who was to dominate distance running in that country. According to one source the name Ribas is found in the Basque country. Ribas was born in Sao Paulo in October 1899, his father emigrated from Spain to Argentina when Jose was seven years old. When the soap manufacturer for whom his father worked went bankrupt, he had to work on the docks. Jose Ribas left primary school to seek work. As Ribas later said "It was one very hard period." At this time he started to sell newspapers in the street. He seems to have continued this occupation throughout his running career, in 1937 being described as a route carrier for three Buenos Aires newspapers.

By the age of 22 he was already competing seriously in long distance running. In July 1922 he set an Argentine record for 10 000 metres of 32:49.0 in Buenos Aires and then in October for 5000 metres of

16:10.6. Internationally, he took bronze medals at 5 000 and 10 000 metres at the Campeonato Latino-Americano held Rio de Janeiro in September 1922, behind Manuel Plaza Reyes who actually was even younger, having just turned 20! Ribas improved the 5000 metres national record to 16:08.0 in May the following year. In 1926 he broke his own 10 000 metres record with 32:48.2, and improved it still further the following year with 32:39.0 in November of 1927. A month later he became the first Argentinean to break 16 minutes, when he ran 15:23.4 for 5 000 metres.

Ribas also became the first Argentine to break nine minutes for 3000 metres when he ran 8:57.0 in April 1928, and he was selected to run in the Olympics that year. International travel was rare in that era and not surprisingly Ribas did not have the right documents. The authorities got a passport for him but unfortunately there was a spelling mistake in it, his name was given as Rivas and not Ribas. By the time this passport had been annulled and another prepared, the boat had already left for France. For a long time Ribas had to be content to run against the stopwatch. But he was now to be faced by a talented Argentine runner who was to make a major impact on the world scene.

3. Juan Carlos Zabala

Juan Carlos Zabala was born in Rosario, a large city 310 km northwest of Buenos Aires, on the western shore of the Paraná River on the 12th October 1912. (Zabala is a very common surname in the Basque country, and means wide and open, a cleared space.) Rosario is an industrialised shipping centre for north-eastern Argentina. Zabala had a tough childhood. His father, a French Basque, had enlisted as a volunteer for the forces and had died in the First World War. His mother, severely depressed by this news, died soon after.

At the age of six, Zabala was taken into the care of the Foyer Ricardo Gutierrez of Marcos Paz. In July 1923 Ribas ran 33:29.8 for 10 000 metres on the track at Rosario. It is possible that the ten year old Zabala saw the best distance runner in Argentina in action. It is perhaps no coincidence that Ribas was later described as Zabala's idol. When Alexander Sterling, an Austrian coach from Brun, emigrated to Argentina in the Twenties, Zabala was playing football in the court of an orphanage which was also a reformatory. At 13 years old, he was befriended by Sterling, who worked as the school's physical training instructor. Sterling realised early on that Zabala was a potential running prodigy, and the two developed an abiding partnership. Sterling was around 28 at this time.

Zabala did not like to train and his mentor, Sterling, had to work hard to keep him dedicated. When Zabala was 15 years old he had an argument with one of his companions which nearly resulted in a fight. Jose Amatuzzo, who was in charge of the group, attempted to end the fight with a challenge to a race on the track. Zabala was not the favourite to win, but he won. From then he had to train more seriously in case of a re-match!

Although he was drawn towards other sports like swimming, soccer, basketball, that contest in 1927 pushed him towards athletics. His first race on the 14 of March of 1928 over 3000 meters he finished second, and from there on his training began seriously. Over the next two years Zabala's precocious talent as a runner began to emerge. On the 31st of May 1929 at San Isidoro he broke Juan Ribas' national 5000 metre record (15:21.2) when aged just 16, in winning the national title. (He also took the 3000 metre title that year). Juan Carlos Zabala was small (eventually 1.64m/52kg) and the Critica newspaper had wasted no time in caricaturing him as a nandou. His nickname became "nandu criollo" [The nandou is the rhea, a large flightless bird very like an ostrich, though smaller. It lives in the great open pampas of South America, and can run very quickly and evenly.]

The following year, Zabala again took the national titles in these events, again breaking the 5000 metre record, reducing it to 15:15.4. Jose Ribas responded to the challenge of the young Zabala, equalling Zabala's mark just six days later in Montevideo, Uruguay. In April of the following year, the two met head to head with the older, much more experienced Ribas winning in a new Argentine record of 15:04.8. Ribas' time was a major breakthrough, but Zabala too was under the old mark with 15:11.0 in second place. Zabala learned from that defeat. A month later in May 1931, when still aged only 18, Zabala moved up in distance and won the South American 10.000m track championships in Buenos Aires, running 31:19.0, beating his idol Ribas who finished second in 31:26.8. However once again, Ribas reclaimed the record, winning an unofficial South American championship at Montevideo, Uruguay in 31:18.8 just six days later.

After years of undisputed dominance, Jose Ribas, now 31, was relishing the competition from the much younger Zabala and being forced to set his sights much higher. But soon he was to be left once again without serious opposition. Alexander Sterling realised that in order for Zabala to challenge the best runners in the world in international competition, which in those days meant the Olympics, he first had

to compete against them and get to know their strengths and weaknesses. Chilean Manuel Plaza who dominated the South American distance championships in the 1920s had shown that South American runners could compete against the best in the world, taking silver in the 1928 Olympics marathon in Amsterdam. He would have been a very important role model for Zabala. South American distance runners could succeed at the highest level. Another newspaper, La Nacion, financed Zabala's voyage to Europe in exchange for exclusive coverage of his races. Sterling's Austrian background made contact with German speaking race organisers easy. Zabala was welcomed, as his presence added even more to the international flavour of Europe's athletic environment.

He was thrown in at the deep end almost immediately. Based in Germany, he was to face two of the best distance runners in the world. The legendary Paavo Nurmi, the greatest of the so called Flying Finns who dominated world distance running, had set the fastest 10 000 metre times in the world earlier at Stockholm. Zabala, after a 20 day voyage to Europe, was not at his best and finished some way behind Nurmi who won in 31:19.1, just marginally slower than Zabala's best, with German champion, Max Syring in second with 31:26.8. Zabala was third in 31:44.8. It must have given Zabala confidence that Nurmi had not beaten the time he himself had set in Argentina. His success over the longer track event tempted him to go further. The longest metric event on the IAAF record books was 30 000 metres, the record held by Vaino Sipila of Finland with 1:43:07.8. The record attempt was set for the Hutteldorf Sportsground, Vienna in Austria just short of a month after the Berlin race, giving Zabala a chance to regain his fitness.. With no suitable opponent, Zabala competed against a local WAF 3 x 10 000 metres relay team. Zabala's inexperience soon showed itself. He was some 22 seconds ahead of Sipila's time at 3000 metres and 28 at 5000 metres, reached in 16:10. He was still 24 seconds ahead at 10 000 metres, reached in 32:54 but then as he entered new territory he began to flag. He took over 17 minutes over the next 5 000 metres, arriving at 15km in 50:02.6, behind Sipila's split of 49:57. The five second deficit had slipped to 11 seconds by 20 000 metres, and to 26 seconds at 25 000, where he clocked 1:24:50. Sipila had taken over 18 minutes to complete the final 5 000 metres, having set a new world record at 25 000 metres, Zabala managed to sustain his pace and gradually get on terms with the world mark. He finished in 1:42:30.4, breaking the old world record by 37 seconds.

For La Nacion newspaper, their sponsorship of the trip had been an excellent investment. When he arrived in Europe, Zabala had regarded the tour as preparation for the Berlin Olympic Games in 1936. Breaking the world record at 30 000 metres gave him still more confidence in his endurance. Only 18 days later Zabala decided to capitalise on his fitness and attempted his first marathon at Kosice in Czechoslovakia. Zabala took the running world by surprise. In pouring rain, he took the lead and ran the fastest ever marathon on that course, 2:33:19. He had not learnt caution from his 30 000 record, indeed his split times at Kosice were faster from 10km onwards. At 30km he was only 6.6 seconds slower than his world record. His finishing time of 2:33:19 was to stand as a course record for 19 years. But after winning so convincingly in Kosice, he became very optimistic about his chances in the Los Angeles Marathon the following year.

Zabala returned home to prepare for the Los Angeles Olympics. His training went well, so well that on the 30th of April 1932 he became the first South American runner to break 15 minutes for 5000 metres, recording, 14:55.8. He set off for the United States arriving on the 2nd May on the steam ship the Eastern Prince and allowing three weeks to acclimatise to his new surroundings, on the 29th May ran 31:26.6 for 10 000 metres in New York, being timed at 14:27.4 for 3 miles en route.

However whilst Zabala had been in New York, he had lost his 30 000 metres world record. Jose Ribas had always been able to break the Argentine records that Zabala had set, he felt himself at least the equal of his younger compatriot. On the 27th May in Buenos Aires he clocked 1:40:57.6, a half a minute faster than Zabala's old mark. The loss of his world record did not seem to impact on Zabala's confidence. It looked likely he would have to face the great Nurmi in the Olympic marathon who in June clocked 2:22:03.8 for 40.2 km. Selected by the Finnish federation Nurmi's entry was rejected by the IAAF. Zabala's greatest threat was removed. On the way to Los Angeles two top marathon runners, German Paul de Bruyn, who won the Boston that year, and Albert Michelsen of the United States stopped off at Chicago to make an attempt on the world 15 mile track record. Zabala joined the field. In excellent condition, he took the lead and looked set to break Fred Appleby's long standing world mark. Spectators wrongly informed him that he was well within schedule and he slowed his pace, ending up 33 seconds outside Appleby's world mark of 1:20:04.4. (11 June 1932 - 1:20:37.4) .He had the satisfaction of finishing well over 6 minutes ahead of Michelsen in second place. Two weeks later Zabala

entered the Los Angeles Times marathon on the 25 June but the heat of the Californian summer made for difficult conditions. Zabala nevertheless adopted his usual fast start and by 15 miles (1:25:00) he led by 8:35. He then hit problems, particularly with either his feet or a shoe and Sterling told him to retire at 19 miles. Michelsen won the race in 2:44:11. Zabala had six weeks to recover.

By 1932 he was one of the favourites for the Olympic marathon, but he later admitted to the writer Michel Chacour, that, in fact he was not old enough to run the marathon in the Games. Born in 1912, Zabala was not twenty years old at the time of the marathon of the Los Angeles Olympics. But a new identity document was created which showed he had been born on the 21 September 1911. Fearing the heat and the humidity of Los Angeles, he prepared himself for the probable conditions through a daily sauna. He had recovered by the time the Olympic Marathon began. Among the other leading marathon runners of the period, Zabala faced his idol and greatest Argentine rival Jose Ribas. (Unlike Zabala, Ribas had only arrived two weeks before after a twenty day voyage from Argentina. Ribas was to finish 7th in the 10 000 metres.)

Zabala took the lead at an early stage along with Margarito Banos MEX and Cliff Bricker of Canada, with Michelsen and Ribas some 50 metres behind with the first of the Japanese, Seiichiro Tsuda. Banos and Zabala exchanged the lead up to 15km but by 23km the Argentinian had a clear lead over two Finns, Toivonen and Virtanen. At 31km Virtanen took the lead and was soon ahead by 300 metres. Then the British runner Duncan McLeod Wright took the lead at 32km, and had a one minute gap over Zabala at 35.5km. Virtanen faltered and soon retired. Then as Wright slowed, Zabala regained the lead with just four kilometres to run. He was not running well but by now he had a winning lead. Briton Sam Ferris was closing fast but was too far behind. For the first time ever in an Olympic marathon, the first four runners were all on the track at the same time, just 66 seconds covered them - it was that close at the finish. Zabala won in 2:31:36 to Ferris 2:31:55. Armas Toivonen took third in 2:32:12 and Duncan McLeod Wright fourth in 2:32:41. This despite Zabala having set a new Olympic record. Ribas had been forced to retire.

Zabala collapsed after crossing the finishing line. The 19 year old had beaten a strong field of much more experienced and older runners, but it had not been easy. However winning an Olympic gold medal in such a testing event so early in one's running career can be a difficult burden - too much, too soon. Having won the ultimate prize, motivation to continuing

training and racing at the highest level was hard to sustain. Zabala was not only the youngest ever winner of the Olympic marathon at 19 years 300 days, (even at his official age of 20 years 300 days, he was still credited with that record), he remains the youngest man ever to win the title even today.

Just twenty days after the Olympics Zabala travelled to a marathon track race organised by the Boston Olympic Club at Salen New Hampshire. Zabala, perhaps seeking to regain his 30 000 metres world record led the pack until 12 miles. He stopped whilst still in the lead, perhaps suffering from the blistering heat. The race was won by Albert Michelsen in 2:50:19.

In July 1935 Zabala travelled on the Southern Cross passenger ship from Buenos Aires to New York where after acclimatisation, he began his American campaign with a handicap race over 5 miles in Rye, New York in early September.. He started from scratch and despite running 25:47, only around a minute and a half slower than Nurmi's world track record, was unable to take the handicap event. Although the race was too short for him, his smooth, machine-like action was much admired. Three weeks later he ran 31:38.2 for 6 miles in a handicap track race in New York again, then in October he won the National Amateur Athletic Union's 30 000 metres championships in Chicago. In this latter race he set the pace from the start, American William Dwyer tried to force the pace for five of the eight laps, of the approximately 3.75km loop, but Zabala won by nearly eleven minutes in 1:44:45.6, a convincing win but nearly four minutes outside Ribas' track record.

Back in Argentina in September 1935 Ribas tackled one of the longest track events on the IAAF list, the Two Hours. For many years this record had been an historical oddity, a distance achieved during Harry Green's world marathon track record of 1913. However in 1933 Ernest Harper, former holder of the world 25 000 metres record, had set a new world mark in Glasgow, Scotland of 33,653 metres. The following year Michel Fanelli of Italy had broken Green's 25 mile world record with 2:26:10.8 in Rome. Leading distance runners had become interested in such events. Reaching 20 000 metres in 1:07:21.6, and 25 000 metres in 1:24:56, Ribas was well outside his own world record at 30 000 metres (1:43:08). At 20 miles he set a new world record of 1:51:11.6, before covering 34,434 metres in two hours for a second world best. (The 20 mile record he had broken - 1:51:54.0 - had been set by the British runner, George Crossland in September 1894 and had been on the record books for over 40 years!) Jose Ribas was now a popular idol in Argentina, the days of the "nandu criollo" were no

more. Whether Zabala took a break from racing and training in 1934 is not presently known, but his Olympic marathon campaign began in the summer of 1935 when he and Alexander Sterling returned to Germany to ensure he could prepare and fully acclimatize. Living in Wittenberg and Berlin, he prepared very thoroughly, going to bed at 9pm, up and out on the road in all weathers by 6am, day after day, getting stronger and stronger. In early February he ran what is reputedly a doubtful 30:44.0 indoors in Copenhagen, Denmark, then ran a handicap race, once again indoors, in Liberec in Czechoslovakia in late March, where he set a world record of 31:05.2. This mark was also an absolute Argentine record, indoors or out. However he was concerned about the rate of his improvement and in April 1936 decided to test himself over the 20 000 metres on the track.

Possibly in deference to Ribas, he had his sights on Paavo Nurmi's Hour record of 19,210 metres, with the latter's 20 000 world mark also a target. Nurmi still held the 10 000 metres world record and his 20 000 record of 1:04:38.4 had been set in 1930. The conditions were not good; Zabala was faced by an icy wind and snow on a wet and unfavourable track in the Munich stadium. He led from the start with his German competitors more intent on avoiding being lapped too many times, rather than making a real contest of the race. Despite first rain, then snow, and then an icy wind, Zabala raced onwards relentlessly, brushing the snow out of his eyes. He was ahead of Nurmi's schedule by 27 seconds at 5000 metres and kept that cushion for much of the race, setting a new South American record for the Hour of 18,753 metres, short by well over a lap of Nurmi's world mark but finishing just over 20 seconds inside Nurmi's 20 000 metre record with 1:04:00.2. When he finished, he was still so full of running he did an extra lap at top speed, leaving the officials and his opponents speechless! Although Zabala was disappointed in his Hour mark, it still placed him third on the all-time list, behind Nurmi and Frenchman Jean Bouin's former world record of 19,021 metres set in 1913.

His good form continued. He broke the Argentine record for 10 000 metres in Wittenberg, GER on the 10th May and then became the first South American runner to break 31 minutes, when he clocked 30:56.2 in winning in Stuttgart eleven days later. In June he travelled to Copenhagen once again and was timed at a very speedy 15:05.0 at 5000 metres halfway through a 10 000 metre race. Perhaps making an attempt on another of Nurmi's record, he was forced to retire from the race which was eventually won by Harry Siefert DEN in 31:01.8. At some stage during this tour the successful partnership with Alexander Sterling

ended. Perhaps as Olympic champion and world record holder, Zabala was less willing to listen to the advice of the man who had guided his career for ten years or more, perhaps because he had met Else Buck, his Danish future wife possibly in Copenhagen.

1936 had been a very cold and wet winter in Argentina, Ribas had fallen sick and bronchopneumonia prevented him from going to the Berlin Games. In August at those Berlin Olympics, Zabala ran strongly in a 10 000 metres final that was dominated by the three Finns who eventually made a clean sweep of the medals, Salminen, Askola and Isohollo, in the fastest times of the year, with Japan's Murakoso in fourth and Burns of the UK in fifth. Zabala was sixth in 31:22. A week later Zabala led from the start of the Olympic marathon, 30 seconds clear at 4km but by 6km, the Korean Kee Chung-sohn (running for Japan as Ketei Son) and Britain's Ernest Harper, along with Manuel Dias (POR) had closed on him. Over the next three kilometres Zabala increased his pace, and pulled out a 43 second lead over Dias. By 15km this had stretched to 1:40, with Zabala clocking 49:45 at this point. By 20km Sohn and Harper were closing again and were now second and third, 50 seconds behind. Zabala surged again, pulling out his lead once again to 92 seconds by 25km (1:23:17). This time was faster than Harper's former world track record for 25km set in Berlin six year earlier, and less than 50 seconds back on the existing world record, with still over 17km yet to run! Sohn took up the chase and at 28km, Zabala tripped and fell, heavily enough that it took him time to get back into his rhythm. Sohn and Harper passed him and at 32km, his chance of retaining his title gone, Zabala retired. Sohn went on to win.

By the following year, Ribas had recovered from his bronchitis and traveled to Dallas, Texas to compete in the first Pan American Marathon. an international marathon of the runners of seven countries. Because he had not received official permission from the Argentine Federation, he was suspended by them. Fortunately this suspension was rescinded before the race. The event was an unofficial championships held in conjunction with Pan American Exposition in Dallas, Texas, He finished second, behind the legendary American Pat Dengis who ran 2:42:43 to win, Ribas running 2:44.00. A distant third was Mel Porter of the USA in 2:49:59.

Earlier in that year, June Zabala ran in an Hour race in Vejle on the east coast of central Denmark where he was based. By that time he had married to Elsa Buck who lived in Vejle. (Perhaps this relationship had been the cause of his break up with his long time coach

Alexander Sterling the previous year, a young woman disrupting the long term male bond between mentor and runner.) In the Hour run, Zabala won decisively, covering 18,071 metres, well clear of his two German competitors, Luethgens and Patzwahl. In another Danish race, in early July over 20km, the "dragoer run" from Amager to the stadium in Copenhagen, he was forced to retire when he badly sprained his left foot after just three kilometres. He struggled on for a further two kilometres before finally stopping. The injury was so bad that he was forced to consult a doctor and cancel a subsequent race appearance.

Barely three months later in early October he ran a 15000 metre track race in Viipuri in Finland. The favourite was the Olympic 10 000 metres gold medalist Ilmari Salminen. At 10 000 metres Salminen led with 31.31,2, with Zabala some twenty seconds back in 31.51.4, with another Finn Emil Kukkonen in 31.59,6, close behind. The winner was the 35 year old Ilmari Salminen in 47.49.2. Emil Kukkonen was second in 48.22.2. (Kukkonen ran the best Finnish Hour mark in 1937 in Stockholm two weeks later when achieving 17 985 metres.) Juan Carlos Zabala was third in 48.51.3. Zabala's 10 000 metre split of 31:51.4 was some way back on the time he had run as a split at the distance in his 20 000 metres record (31:20) (his 15km split there would have won him the Viipuri race.) It is likely when injuring his foot three months earlier he had at least torn ligaments, if not broken a bone in his foot. Specialist care of such sporting injuries was not readily available in the 1930s. Continuing to run a further two kilometres on a serious injury at the time and then running a highly competitive 15km race barely three months later could well have caused the end of Zabala's career.

As well as the injury, having won arguably the greatest prize in world distance running, the Olympic marathon title so early in his career at such a young age, the suspicion must be that only the prospect of Olympic competition could then motivate him. The loss of the Helsinki Games of 1940 and then the subsequent 1944 celebration, denied him the opportunity to attempt a then unique second Olympic title. Zabala would only have been 35 when the 1948 Olympic Marathon was held in London, but by then it is likely that he had been long retired from competition. He died at the age of 70 in Buenos Aires on the 24th January 1983.

At 38 years, soon after his last marathon in Dallas, Jose Ribas he sailed home to Buenos Aires from New York on the steamship the Western World. His decision to retire from distance running had been made, and the sea voyage gave him the opportunity to reflect on his

fifteen year record breaking running career. On his return to Argentina Ribas became a race walker, improving the South American record of the 10km. And then, at 42 years old, he gave up the athletics completely, he later said because of the problems he had suffered all his life.

3. The Ibarra Brothers

By this time, two new runners of Basque descent were beginning to dominate Argentine distance running, the Ibarra brothers, Raul and Ubaldo. (Ibarra means bank, shore or riverside in the Basque language). Raul was to be idolised for his outstanding performances and his fame made him many friends, but those that knew the history of the Ibarra brothers knew that but for Ubaldo, Raul would perhaps not have achieved anything.

The brothers were two entrerrianos, former residents of the Entre Rios state in Argentina, north of Buenos Aires. Raul was the elder, born in 1914, and Ubaldo on the 3 May 1915. They came from a traditional humble family; both were born in Parana, around a 100km from Rosario, the birthplace of Zabala, on the other side of the Parana River. From childhood the brothers had a healthy life. Despite their poverty and poor nourishment as children, they showed that they had great capacity as distance runners at the international level. Oscar Martinez, at that time known for cycling in Entre Rios, and other energetic sports, was a leader in encouraging children to develop a healthy life style, and Raul and Ubaldo were among those children. Martinez taught those children gymnastics. This physical activity enabled the Ibarra brothers to grow up used to the practice and dedication of sport.

A friend of theirs, Francisco Francetti was an outstanding runner and the Ibarra brothers frequently accompanied him in his training. This training often took place in poorly lit places in Parana that meant that the brothers, who were his timekeepers, had to carry a candle to be able to read their stopwatches. But soon they decided that instead of helping their friend they would take up running themselves instead. After beginning training together they soon surpassed him. Ubaldo and Raul took their running very seriously and began to train on their account in the principal plaza of the town. The main disadvantage they faced was that they did not have a stopwatch; however there was a great clock on the door of the café on the corner of the plaza, which they used for their training, in fifteen days they had lowered by eight minutes the time for their training distance.

Their first competitions were in Parana but soon Ubaldo became well known in Sante Fe and went on

to win the Luisi trophy in Buenos Aires. The leaders of the Club Honor y Patria llamaron asked Raul to join them and he ran in their club colours. He went to the Ciudad de La Plata and beat Otto Recklau over 3,000 meters. Soon after he went to live in the famous Villa Desocupación in Puerto Nuevo in where he was forced to survive without real support. Because of the lack of proper food at the villa Raul produced a poor performances in the 5,000 meters. This was noted by Francisco Mura of the club Sport Andean and he was not chosen to compete in the athletic meeting the Criterio Apertura.

After this he found a job in order to survive and feed himself. Francisco Mura advised him to write to his brother Ubaldo asking him to send him training schedules by mail to get Raul ready to compete in Buenos Aires. Ubaldo appears to have been the more dedicated runner in the early years despite being the younger. Raul, being young, then wasted a year smoking and not training. This caused him to make a poor start in his racing career but his ability as a runner enabled him to win the first day of the Luisi Trophy on the distance of 4,800 meters and to lower the record of 15:55 of Neri Aguiar to 15:29. The following day, accompanied by Ubaldo, he raced over the distance of 6,700 meters and broke another record, that of Roger Ceballos of 21:18 taking it to 21:05 from 21:10.

On the 8th of December of 1934 Raul entered the most important race in Argentina at the time the "Maratón de los Barrios". In this race it was not until the town of Independence that Raul Ibarra took the lead from the leading runners Sensini and Recabarren As the runners neared the finish, Armando Sensini regained the lead to try and break Ibarra, but as the buglers announce the runners were nearing the finish, Ibarra increased his lead over Sensini to one hundred metres, making his entrance into the football stadium of the Club Atlético Boca Juniors. Fifteen thousand people were present at the festival organised by the Grafico newspaper, hoping to see also the arrival of the maratonistas. Ibarra, the winner of the first Maratón de los Barrios won in 1:07:13 from Sensini's 1:07:47. This race marked the start of Raul Ibarra's rise to fame. (Armando Sensini was to have a long career, winning the South American road race championships over approximately 20 miles in 1947.)

Raul Ibarra's running career on the track over the next ten years was to place him among the world's elite distance runners, yet because to the Second World War he never able to compete in an Olympic Games. In the early days it had been Ubaldo who was the major figure. He was a precocious runner - in 1934 at

the age of 19 he had finished second at 3000 metres to the then dominant distance runner, Roger Ceballos, when the latter set a new Argentine record for the distance of 8:36.6, with Ubaldo also inside the old record. (His time of 8:38.0 was a world junior record.) With Ribas moving up to longer distances, and Zabala inactive, there was a vacuum in which Ceballos could flourish. Ubaldo had also finished second when Ceballos had earlier run a fast time at 5000 metres, with 15:03.4 which probably placed him third on the ARG all-time list when likely to be just 18!

Ubaldo seems to have been maturing rapidly as a runner and in December that year he won a 10 000 metre race in 32:00.4, the second fastest ARG time of the year behind Ceballos's 31:51.5 I don't have any times for Ubaldo for 1935 but in Olympic year, 1936 he reportedly ran 14:54.8 for 5000 metres in Buenos Aires in April which placed him in the top 30 in the world, just 0.4 behind Roger Ceballos' ARG year best. It was in the 1937 South American Championships held at Sao Paulo Brazil that Ubaldo made his international debut. He took the gold medal at 3 000 metres in 8:53.6, and silver in the 5 000 and 10 000 metres in 15:52.8 and 33:56.8. Two years later Ubaldo took silver in the 3000 metres in 8:44.0 and bronze in the 5000 metres in 15:12.2 with Raul also taking silver in the 10 000 metres in 31:53.6.

Meantime Raul had been establishing himself. In October 1938 he ran 31:49.0 for 10 000 metres, just outside the world top 30, and the following year improved to 31:07.2 to place himself just outside the top 20. It was in 1940 that Raul came into his own. Early in the year, in May he ran 14:32.4 for 3 miles in Buenos Aires to rank fourth in the world that year. The Argentine 5000 metre record of Zabala had been lowered in 1936 to 14:54.4 by Roger Ceballos. In October in Buenos Aires Raul reduced this by over a second to 14:53.0. Less than a month later he equaled Ceballos' 3000 metre record with 8:36.6. However his greatest run that year came in December in Buenos Aires when he broke the national record of 30:56.2 held by Juan Carlos Zabala by close to 20 seconds, recording 30:36.8, to rank 4th in the world, and the top non-European. His 6 mile split of 29:39.2 was the fastest of 1940.

1941 was Raul Ibarra's greatest year so far in the South American Championships, which took place in Buenos Aires. He won all three distance titles, 3000 in 8:39.4, 5000 in 14:57.2 and 10 000 in 30:45.0. He also set new national records at 3000 metres (8:30.4) and 5000 metres (14:37.0) Following the example of Zabala and Ribas, Raul Ibarra looked to the world long distance track records. By 1941 Raul Ibarra had

shown that he was without rivals in South America. With the World War still raging, there was no opportunity for him to test himself in the Olympics, so he sought to measure himself against the world record standard instead. The record he chose was already held by an Argentinean of Basque descent, it was Zabala's 20 000 metre mark.

The afternoon of the 14th of June 1941 was unusually cool. When Ibarra appeared on the track he was greeted with uproarious cheers "Ibarra Ibarra". Everyone expected a world record to be set that day. Ibarra reached 3 000 metres in 9:12, 5 000 metres in 15:21.6 on the way to a 10 000 metre halfway split of 31:16.2. He looked set to improve Zabala's world mark by a substantial margin. The first South American record to be broken was at 10 miles, where Raul Ibarra clocked 50:55. The clamour of the spectators grew more and more intense, encouraging and driving Ibarra forward. Another South American record came at the hour, 18,874.91 metres, no longer was there any doubt, the world record would be broken.

As Ibarra reached 19 600 metres the spectators overflowed onto the track, all wanting to be there at the finish. Ibarra's last lap was accompanied by spectators, forming a guard of honour to the finish line. Although everyone was convinced a world record had been set, the time was unknown. It was then announced - 1:03:33.1. Ibarra had beaten Zabala's World, South American and Argentine record by 27 seconds. More importantly he had established himself as a world class runner. The Magazine Grafico wrote the number of spectators and their enthusiasm and vociferous encouragement, the great numbers of journalists and the number of reports of the race would do much to popularise Athletics in Argentina. Ibarra's 20 000 metre world record was never to get the recognition it deserved. During wartime, news traveled slowly across the world. By the time reports of the Buenos Aires race had reached Europe, Hungarian Andras Czaplár had already surpassed the time, running 1:03:01.2 in Budapest some four months later on the 26th of October.

Currently I have no performances by either brother for 1942. Seeing the round of celebrations that modern sports celebrities have to undergo following a major triumph, it must be suspected that Raul Ibarra became unfit through too many celebratory dinners and lack of training. It is possible that Ubaldo, who appears to have been the more conscientious and focused earlier, had decided perhaps in 1940 or so when around 25 that it was time to settle down to career and family. Competing seriously since his late teens, he had given perhaps seven years of his life to his running. Perhaps

his absence from the running scene in 1942 meant he was not considered for the South American Championships the following year. Argentina's representative Delfo Cabrera took bronze in 3000, 5000 and 10 000 metres, and was to win the 1948 Olympic marathon in London. However 1943 saw Raul Ibarra running 14:53.0 for 5 000 metres and 30:59.0 for 10 000 metres on successive days, winning both races. It is probable that these were the Argentine championships.

The following year saw Raul Ibarra fully recovered, running 9:05.0 for 2 miles on the 1st May, and then running the second fastest 3 mile race of the year in 13:57.0, en route to a new Argentine record for 5000 metres of 14:24.8 (Viljo Heino's split time at Gothenburg in a 5000 metre race in September was the only 3 mile mark faster.) Ibarra's new 5000 metre was record ranked him 4th in the world in 1944 behind Viljo Heino, Gosta Jacobsson and Gunter Hagg.

In 1945 in Montevideo in Uruguay, Raul Ibarra once again showed he was the strongest distance runner in the continent and swept the board, taking the 3000 metres in 8:39.4, 5000 metres in 15:00.5 and 10 000 metres in 31:52.6. Intriguingly an Oscar Ibarra ARG also took the bronze medal in 32:48.6. Whether he was related to Raul and Ubaldo is not known. The latter part of Raul Ibarra's running career is far from clear. He was now facing serious competition from younger runners. In 1941 and 1942 Delfo Cabrera was national champion in 3.000 and 5.000 meters, having won the 1500 metres the year before. Cabrera who came from the small city of Armstrong, around 100km from the birth places of both Zabala and the Ibarra's, like those men had also had a hard childhood. His father died when he was young His mother Juana Gomez was obviously a major influence in his life and he made a promise to her that he would bring back the gold medal from the London Olympics of 1948. Gomez was originally a Castilian surname but was later common in parts of the Basque country, particularly Karrantza area. So there is a possibility that Cabrera also was of Basque stock. However there have been several talented runners from Latin America named Gómez or Gomez, and there is no certainty as to Cabrera's Basque heritage.

In 1946 Cabrera was national champion at 10.000 metres but the fastest times by distance runners from Argentina were by Jose Campagne and Eusebio Guinez, first and second in a race in Buenos Aires (31:04.1 and 31:09.8.) The following year Ricardo Bralo seems to have established himself as the best 10 000 metre runner in Argentina, recording a time of 31:09; Cabrera was second best with a much slower time of

31:48.5. Bralo continued to be the top 10 000 metre performer up until at least 1951, and took both the 5000 and 10 000 metres at the South American Championships in 1949 (15:02.8 and 31:46.3). following up with the Pan-American title on home soil in Buenos Aires at 5000 metres (14:57.2) and silver at 10 000 metres (31:09.4) with fellow Argentine Ezequiel Bustamente taking the bronze with a distant 32:31.8. The Pan-American marathon was won by Delfo Cabrera in 2:35:01 with Reinaldo Gorno taking the silver 2:45:00.

In 1952 the South American championships were held in Buenos Aires, Reinaldo Gorno took silver in the 5 000 metres (15:05.5) and Delfo Cabrera took the gold in the 10 000 metres in 31:05.7. An article on Argentinean athletics in a 1952 issue of the German athletic magazine *Leichtathletik* by Gerhard Bönnhoff mentions that Raul Ibarra was back in training after a break from competition – so there was obviously a period possibly in the late 40s and certainly in early 50s when he went into semi-retirement, whether that was through injury, illness and for personal reasons is unknown. In 1953 we get an idea of the level at which Raul Ibarra was now operating. There was an unofficial South American championships held in Santiago, Chile. Ricardo Bralo took the 10 000 metres in 31:36 but Raul Ibarra, now either 38 or 39, took third in 32:19.2. In the 5 000 metres he faced to man who was to be the new Argentine and South African distance star, Osvaldo Suarez, who was to break many of his national and South American records. Suarez won in 15:23.1 but Ibarra was close behind in 15:25.5.

Ibarra was reputedly selected for the Argentine team for the Pan-American Games held in March 1955 in Mexico City. Argentina did well in that Games, second only to the United States in the medal tally. Osvaldo Suárez won the 5 000 and 10 000 metres in the difficult altitude conditions, (15:30.6 & 32:42.6) but no other Argentine runner figured among the top six finishers in the 5000 and 10 000 metres. Doroteo Flores of Guatemala was sixth in the latter event in 35:10.8 which gives some indication of the impact of altitude and the possibility that the aged Ibarra did not finish in the events he was entered. There were also no Argentine medalists in the marathon, won in 2:59.10 by Flores, with the next two medalists over three hours, indeed no Argentine runners in the top six, with George Norman taking 3:45:40 for sixth. In September 1955 the Argentine Peronist regime was ousted in a coup, and formerly favoured distance runners were left in limbo, ignored for international events for some years. This 1955 Pan American Games reference is the last I have found for Raul Ibarra; who now would have been over 40. Perhaps surprisingly

he does not appear to have chosen to move up in distance to the marathon in his later career in his 30s, as had Armando Sensini, who he beat in 1934, who had competed in the London Olympic marathon at the age of 39, finishing 9th.

After this remarkable period in Argentine distance running, prominent distance runners in South America having a Basque heritage become less apparent.

4. Silvio Salazar

In 1976 the Columbian runner Silvio Salazar took the silver medal in the South American Junior Championships in Maracaibo, Venezuela over 5000 metres with a time of 15:01:15. He had been born in 1958. As an adult performer he was to win six medals in the South American Championships over the next ten years. Salazar is also a Basque name - ZAR means old, and SALA is Palace, so the meaning is "The Old Palace".

In 1979 Silvio Salazar won the South American 10 000 metres title at Bucaramanga, Columbia at the age of 20 or 21, defeating the existing champion, fellow countryman Domingo Tibaduiza by less than a second (28:50.4 to 28:51.2) Tibaduiza had been the top distance runner in Columbia since the mid 70s and the previous year had set national records at 5 000 and 10.000 metres. At the end of that year, in the famous 8.40 km Sao Silvestre Midnight race held at San Paulo at New Year, Salazar finished second to Jose Joao da Silva of Brazil 23:53 to 23:40. This race attracted international distance runners year after year and had been won by such runners Emil Zatopek, Viljo Heino and Frank Shorter. The following year, Salazar again finished second, this time to fellow countryman, Victor Mora, much closer this time and under the winning time of the previous year, 23:35 to 23:30. He began 1981 by beating Victor Mora in the San Cristobel Half Marathon in 62:14 on what seems to have been an uncertified course. Mora was the other top Columbian distance runner of the mid 70s onwards, and had also set numerous national records.

Later that year in the South American championships at La Paz (BOL) Silvio Salazar took silver in both the 5000 and 10 000 metres behind Mora who took both titles. Also 1981 saw Silvio Salazar win the Central American and Caribbean 10 000 Championships title and finished second in the 5 000 (29:48.13 and 14:12.06) in Santo Domingo, Dominican Republic. He also won both the 5 000 and 10 000 metres (14:13.93 & 29:41.99) in the "Juegos Bolivarianos" (Bolivar Games) in Barquisimeto, Venezuela (The Bolivar Games is a quadrennial multi-sport celebration for the five South American nations liberated from Spanish rule by

Simón Bolívar in the early 19th century.) In 1983 Silvio Salazar also won the 5 000 metres (13:52:19) in the biennial Campeonato Iberoamericano championships, a contest between Spanish and Portuguese speaking nations in Barcelona. On the track the following year he ran 28:44.89 for 10 000 metres in October, which was probably a personal best.

Early in 1985 he won the San Blas Half Marathon in Peru against tough international competition in 64:22. The South American Championships in September in Santiago, Chile saw him take bronze in the 10 000 metres, and then he took silver in the Central American and Caribbean 5 000 metres Championships and bronze in the 10 000, (13:45.0 and 30:12.0) in July in Nassau in the Bahamas. (BAH). Two years later, he took the silver in the Central American and Caribbean 10 000 Championships in 30:38.69 in Venezuela in July. The following year Salazar made his only move up to the marathon. He travelled to Boston in April and ran 2:17:49 on the point to point course. In another race in the United States in August he finished second in the Asbury Park road 10km in 29:48 in New Jersey behind American Keith Brantly (29:35).

After winning the national 10 000 metre title in 30:37, in the 1989 South American Championships at Medellín in Columbia, he took bronze at 10 000 metres at altitude with 30:14.3. That year he also set a national record at the rarely contested distance on the road of 12km running 35:19 in the same city in September. His second Columbian record came at the Half Marathon in 1990 when he ran 1:03:41 at San Cristobal. His 14 year international career had seen him make a major impact at the regional level but despite early promise on both track and road, he had not then broken through to become a world class athlete. His running career overlapped with another runner, who perhaps cast Silvio into the shadows by ensuring the surname Salazar was associated with his feats. His name, Alberto Salazar.

5. Alberto Salazar

The Basque Diaspora had also reached Cuba, reaching the island as early as the 16th century. Alberto Salazar was born on the 7th August, 1958 in Havana, Cuba. His parents and siblings left Cuba for Miami before moving first to Manchester, Connecticut and then to Wayland, Massachusetts where Salazar was the state cross country champion in 1975. He then went to the University of Oregon where he was a member of the 1977 NCAA cross country championship team, winning the individual NCAA cross country championship the following year. Like both Zabala and Ibarra he tackled a long distance track event, finishing fourth in an Hour race in 1977 with 19.537m

at the age of 18, which still ranks him in the top 15 all-time US performers in that event. In 1978, whilst still at college, he beat the famous marathon runner Bill Rodgers in the Falmouth 7.1 Miler in Massachusetts.

He finished third in the US Olympic Trials 10,000 metres and qualified for the 1980 Olympic team (which did not compete due to the USA boycott).

In 1981 he broke the American indoor 5,000 metre record in February at the Millrose Games in New York running 13:22.6. This broke the former US record by close to 20 seconds. He finished second to Suleiman Nyambui, who ran 13:20.4 to set a new indoor world record.

Between 1980 and 1982 Alberto Salazar won three New York marathons, setting a time of 2:09:41 on his debut. At the time this was the second fastest US marathon. In 1981, Salazar was initially credited with a new world record of 2:08:13, but on re-measurement the course was found to be 148 metres short of the full distance. (This problem affects all the New York marks during this period.) Salazar ran the Boston marathon in 1982 where he and his fellow American Dick Beardsley ran stride for stride for much of the race, Salazar winning in a sprint finish in a course record of 2:08.52. Collapsing after finishing, Salazar was taken to an emergency room, where he was given six litres of fluids – reputedly he had not drunk any water during the race. Track and Field News ranked Salazar the top marathon runner in the world for his wins in Boston and New York, as well as the No 1 in their American Road Rankings for setting a US 10km road record of 28:04 at the Orange Bowl event, and for setting a new course record of 31:53 in the high profile 7.1 mile Falmouth road race.

That year he was also ranked 8th in the world at 5000 metres with his US record of 13:11.93 in Stockholm, Sweden and 2nd in the world at 10 000 metres with another US record of 27:25.61 in Oslo, Norway. Salazar was also a successful cross country runner, winning the 1978 NCAA national cross country championship in difficult snowy and cold conditions. The following year he won the U.S. national cross country title. Internationally he did well finishing second in 1982 and fourth in 1983 in the IAAF World Cross Country Championships

In 1983 Salazar broke the US 10km road record twice, running 38:02 and then 28:01 and was once again ranked No 1 in the Track and Field News Road Rankings. That year he also took the US 10 000 metres title, beating Craig Virgin. However, suffering from bronchitis, he finished last in the World Athletics

Championships, and lost his first marathon, finishing fifth in the Rotterdam marathon in 2:10:28 in the Netherlands, and then was fifth again at the end of the year at the prestigious Fukuoka marathon in Japan, despite running 2:09:21. It is possible that the bronchitis developed because his immune system was severely depressed from his extremely demanding training regime. The following year Salazar was selected to compete in the Los Angeles Olympic Marathon, but was to finish 15th in 2:14:19. Salazar later said that the bronchitis in 1983 had led to him developing asthma although he was not to realise this until the early 1990s. During that period his asthma had gradually got worse and worse, reducing the oxygen to his muscles. Instead of having the lung function of an elite athlete, he was reduced to that less than a normal person. The anxiety stemming from his then inexplicable loss of form led him to being prescribed Prozac, and then with the identification of his asthma he was once again able to train solidly.

In 1994 he entered the Comrades Marathon, a large, highly competitive 90km/56 mile race in South Africa held between Durban and Pietermaritzburg. An ultra novice, he started out too fast and was in the lead at 25km, and by 50km was in front by 7 minutes. The experienced runners waited for him to fade as other reckless novices had done in the past. He didn't, won but on crossing the line he collapsed into the arms of waiting officials. Five minutes later Nick Bester of South Africa finished second. This was to be Salazar's last competitive race. Three months later, doing bounding drills he tore a tendon in his foot, he ignored this and did more damage, enough to ensure his racing days were over. Since 1994 Salazar has become coach of the Nike Oregon Project. This project, designed to produce distance runners capable of competing in the Olympics, has included runners such as Galen Rupp and Adam Goucher.

6. Conclusions

What is interesting is that Zabala, Ubaldo Ibarra and Alberto Salazar seem to have had similar career profiles. They were precocious youngsters, who ran remarkable times in their early years, but their careers were cut short – Zabala at 25, Ubaldo Ibarra perhaps at 24 and Salazar at perhaps 25, if his late flourish in the Comrades is seen as a discrete, separate part of his career. Silvio Salazar likewise achieved his best performances early in his career.

This article has focused entirely on men thus far, in part because it has relied on Basque surnames to identify those runners with a Basque heritage. Moreover women's distance running is a recent development, relatively speaking. Despite this at least

two women can be identified among the medalists in the South American championships. In 1993, Marilu Salazar of Peru took the silver medal in the 10 000 metres on the track in a time of 33:57.8. Another endurance competitor with a Basque heritage was Geovana Irusta of Bolivia who won the 10 000 metre walk in 1997 and took silver in the 20 000 metre walk in 1997 and then gold in the same event in 2001. At a national level in 1998 Lelys Salazar won the Argentine national Half Marathon title in Gálvez in 1:17:17.

This survey of the impact that Basque running heritage made on Latin American distance running is far from complete; there may be numerous other athletes who have been overlooked. However what is clear, at the highest level, with world, continental and national records, the Basque heritage did make a major impact on Latin American distance running. As I noted in my earlier article, *The Great Running Traditions of the Basques*, **Juan Cruz Azpiroz**, the korrikalari who had run against Gordon Pirie, was tested by the German physiologists Woldemar Gerschler and Hans Raindell at Freiburg University in 1956. The originators of the system of interval training and specialists in the development of the cardiovascular system, Gerschler and Raindell were amazed at Azpiroz's capacities.

It is likely that the Basque running heritage had a large genetic component, and was not just based on a running culture. However looking at a similar isolated running culture in Latin America, the Tarahumara Indians of Mexico, physiologists have noted that there is little difference between a sedentary Tarahumara and the average person. To develop the genetic potential, long term early conditioning is necessary, and the willingness to prepare. Zabala was motivated and guided by Alexander Sterling, Raul Ibarra by his brother Ubaldo and possibly Alfredo Albónclo, who was also reputed to be very influential in his career. Salazar was coached by the renowned Bill Dillenger, so the raw talent required skillful nurturing to reach fruition. It could be argued of course, that with 10% of Argentina's population being of Basque descent for example, there was a reasonable probability that that percentage will be represented in the distance running community at the highest level. Jose Ribas, whose Basque heritage is less certain, along with runners as Delfo Cabrera, show there were other strong distance running traditions in Latin America. In 1948 Argentineans Delfo Cabrera (1st), Eusebio Guíñez (5th) and Armando Sensini (9th) in the top ten was a show of national strength in depth matched only by the Finns until then in more recent Olympic marathons.

New York Times

Although Manuel Plaza Reyes (CHI) who dominated the early South American track championships before taking the silver medal in the 1928 Olympic marathon and Jose Ribas did much to lay the foundation of South American distance running, it was Zabala who brought inspiration and belief. It is no coincidence that the runners who broke Zabala's world records at 30 000 and 20 000 metres were both Argentinians. His example made them realise that runners from Argentina could aspire to break world records and win Olympic marathons.

Obviously Zabala had a much greater impact in Argentina which was to be a richest source of South American marathon talent. Aside from 1932, Argentine marathon runners also won the 1948 Olympic title and were second in 1952. This chain of success was broken in 1956. The Argentine distance runners like Osvaldo Suarez, who had been previously supported by the Peronist Argentine Government, were ignored when that regime was ousted by a coup. Only three discus throwers were sent to Melbourne. Although Suarez was to finish ninth in the 1960 Rome Olympic marathon, the growing strength of African and Soviet runners were to make it much more difficult for South American marathon runners to challenge for the ultimate crown, and the great Argentine distance running tradition was effectively broken. Zabala and Ibarra had done much to encourage, inspire and shape the national distance running tradition. The outstanding talents of Zabala, Ibarra and Salazar were indisputably amongst the greatest distance runners to emerge from Latin America

These men were worthy successors to the great Basque Korrikalaris, professional runners, who had dominated basque endurance running with their match races in the 19th and 20th centuries, and who in turn had continued the traditions of the basque running footmen of the 18th century. Possibly the most interesting question is whether Juan Carlos Zabala, Raul and Ubaldo Ibarra and indeed Alberto Salazar were aware of this basque heritage.

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Cifras sobre precios de zapatillas de correr en España (1982-2007)

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Resumen

¿Es ahora más caro equiparse para correr o se mantienen los precios del conglomerado de útiles para correr? El material se ha especializado y las tecnologías muestran avances que tendrán un impacto en el escaparate y, ¿también en el precio?. En este artículo evaluamos los precios de las zapatillas para corredores e intentamos calcular si ahora nos supone un esfuerzo de renta mayor.

1. Introducción.

La preocupación por la salud y el culto al cuerpo es uno de los tópicos que nunca faltan en cualquier análisis de la sociedad occidental. Esta preocupación reciente, quizá solo en boca de todos durante los últimos 50 años (el boom del correr en USA fue en los años 70, en España en los 90), ha generado un gasto importante y la reestructuración de una parte de los presupuestos familiares. El deporte es un sector con un potencial de crecimiento importante a medio y largo plazo. La facturación total en 2006 fue de 3.620 millones de euros, un 6,5% más que el año anterior, lo que sitúa a España por encima de la media europea en lo que a gasto medio por hogar se refiere, 232 euros, frente a los 219 de Europa [Cetelem, 2007]

¿Cómo tratar los precios de un artículo así? El calzado específico para un deporte no aparece desgranado en ningún anuario estadístico. Las categorías generales suelen agruparse en 'grandes operaciones' del INE como se recoge en las Encuestas de Presupuestos Familiares. Bien como 'esparcimiento, cultura y otros', 'textil y calzado', bien como 'ocio' o diferentes epígrafes, el material para el deporte aún no es tan importante como para ocupar una parte en la metodología científica española sobre gasto familiar. En cualquier caso, el consumo familiar en España creció un 62% entre 1985 y 1996. El gasto en servicios (entre los que se incluyen metodológicamente los de ocio y cultura) experimenta una subida espectacular entre 1980 y 1990 y más sostenida y moderada hasta 2001. Cabe esperar que la cantidad del presupuesto familiar que se dedique a la compra de material deportivo y, en concreto, material para corredores, se haya incrementado igualmente.

Asimismo nos encontramos con una **evolución integral** del mundo del corredor. La zapatilla pasa de

ser casi un objeto de lujo importado para especialistas, a ser después un elemento de disfrute específicamente creado para los tipos de corredor y entrenamientos variados, y finalmente un objeto casi de diseño hecho a la carta, coleccionable y adquirible por Internet. La incorporación de la mujer, los *joggers* o corredores recreativos, el *nordic walking* y las mil maneras de hacer ejercicio corriendo o caminando hacen que la zapatilla adquiera una expansión y variedad bestial. De tener las zapatillas buenas para competir a 4 pares para series, relajarse con las últimas Nike *free* o triscar por las pedreras vascas o desierto argelino con las últimas *trail*.

Básicamente hemos contado con la recopilación histórica de precios de zapatillas que posee una tienda como RANNING, heredera del esfuerzo de los pioneros en el calzado deportivo en Madrid, así como la publicidad insertada en las revistas que han ido apareciendo y desapareciendo del panorama editorial. La posibilidad más sencilla y de menor riesgo de error parecía equiparar el contraste de la evolución de los precios objetivos y subjetivos respecto de otros artículos y los salarios más la inflación de los momentos históricos. Hemos considerado 3 momentos para el análisis. Los años **1982-84** como primer corte, en plena creación de las primeras carreras populares regladas, del crecimiento de aquella década mítica. En segundo lugar **1992**, año de importancia para el deporte español y quizá una buena oportunidad por parte de las marcas deportivas de reordenar la oferta de material. Finalmente, nos sirven los datos más recientes (primer trimestre de **2007**) para elaborar la tabla 1.

2. Los años 80. Las primeras zapatillas llegan a España. La zapatilla de correr es un objeto de lujo.

La introducción de las primeras zapatillas de deporte en España específicas para corredores está llena de

leyenda y mito. Aficionados y apasionados que se metían en un coche y recorrían 2000km para ir a

1982-84		1992		2007	
modelo	pvp	modelo	pvp	modelo	pvp
NB 399	64	Kelme Wild Trainer	54	Nike Structure	101
Karhu Titan	62	Kelme Wild Racer	60	Asics 1090	97
Adidas Oregon	51	Reebok Boston	65	Asics Cumulus VIII	108
NB 395	60	Reebok Graphite Train	84	Asics Gel Racer	111
NB Comp 200	59	Reebok Ryno	53	Asics Gel Mojave	85
Karhu Strada	55	Reebok Inferno	71	Asics DS Trainer	134
Karhu Navy Star	47	Reebok Racer X	67	Asics Gel Kayano	154
Joma marathon	28	Adidas Torsion Resp	69	Asics Speedstar Racer	104
		Adidas Torsion Adv	51	Joma Carrera III	66
		Adidas Manum	30	Mizuno Wave Escape	79
		Adidas Myriam (F)	29	Asics 1110	91
		Nike Air 180	100	Asics 2110	110
		Nike Air Huarache	88	Adistar Control	132
		Nike Air Anodyne	77	Brooks Adrenaline	102
		Nike Air Savonne	59	Nike Air Zoom mara.	87
		Nike Air Huarache (F)	83	Joma Carrera IV	64
		Nike Air Icarus (F)	51	Nike Cesium	114
		Saucony Grid 9000	89	Mizuno Wave Mustang	104
		Saucony Progon	75	Mizuno Wave Rider 8	120
		Saucony Jazz 3000	54	NB 1221	129
		Saucony Sceptre	53	NB 900	108
		Saucony Constelation	40	NB 834	98
		Karhu Otix	45	Saucony Gr Azzura	104
		Asics TN 25 Gel	99	Saucony Gr Hurricane	143
		Asics A6 Gel	74	Saucony Gr Trigon Lite	111
		Asics TN 31 Gel	60	NB 834 (F)	93
		Saga			
		Asics LD Racer	64		
		Asics Lytespeed	72		
		NB 421	52		
		NB 577	83		
<i>pvp medio</i>	<i>53</i>		<i>65</i>		<i>106</i>

Alemania a convencer a los fabricantes de que querían distribuir sus Puma y Adidas en un país donde se estaban celebrando ya algunos maratones, medias, donde había cierta tradición de crosses, y regreso por carretera con el maletero aprovechando hasta el último rincón para incrustar una caja más. El mercado estaba copado por media docena de marcas, las cuales no eran las dominadoras exclusivas de los pies de los participantes en carreras. Durante los últimos 70 y 80, los corredores se calzaban casi cualquier cosa que oliese a zapatilla deportiva. Las fotos brindan pies

pataleando las temibles cuestas del antiguo MAPOMA con calzado de tenis, de loneta, cualquier cosa. Paredes era una de las pioneras. JOMA arrancaba con calzado que era testado y desarrollado siguiendo consejos del maratoniano y doctor Ricardo Ortega (marca, año). Pero Karhu dominaba con New Balance. Antes que Adidas impulsara definitivamente su posición dominante, los anuncios de las revistas de la época (apenas Jogging y Atletismo Español) olían a Oregon y a Finlandia. Karhu Titan, NB 399, Adidas Oregon o Joma marathon eran lo mejor y más

específico que se podía encontrar en tiendas míticas de la capital como Moya, Princesa, Ferrari, Bikila o los consejos de aquellos Rafa Martínez (germen de Marathínez y RANNING), Luis Hita o Fernando Pineda en Madrid, y sus coetáneos en Barcelona, San Sebastián o Valencia, sirviendo a la clientela que ya era fija de los maratones de aquellas ciudades. Los precios empezaban a subir (ver tabla, fuente Catálogo Rafael Martínez y RANNING) y las referencias alentaban a dedicar algo más de 5.000 de las antiguas pesetas a calzarse un elemento técnico. La EVA moldeada, la pala con una rejilla suficientemente transpirable, comodidad y sujeción, parecía que la inversión necesaria para salir del agujero de los 80 rondaría los 50 o 60 euros. La tarea de las marcas parecía la de convencer al corredor para que apostase por un elemento de calidad, ya no de lujo. Era la transición hacia un objeto técnico.

3. La década olímpica. La zapatilla de correr es un objeto técnico. El boom español del correr.

Aunque la cuestión del mercado de la zapatilla del corredor estaba aún abierta a bastantes posibilidades, los inicios de los años 90 se topaban con dos problemas, si nos enfrentamos a los datos fríos. La designación de Barcelona como sede de los Juegos Olímpicos de 1992 no ocultaba el hecho del estancamiento de la participación en maratones y carreras populares. Madrid, San Sebastián, Valencia y Barcelona estaban nutriéndose de los mismos corredores de la década de los 80. Para el consumo, esta dependencia podía tirar hacia dos lados. O los corredores, cada vez más curtidos, sabios y veteranos, apostaban por el calzado de calidad y hacían caso de las recomendaciones de renovar las zapatillas, tener un segundo par para entrenar y un tercero específico para competir, o intentar convencer a aguerridos corredores casi autosuficientes era darse con mentes cerradas y encallecidas en la autosatisfacción del sabio del correr popular. La renovación de la base de las carreras seguía sin producirse y solo un empujón del consumidor joven daría ventas para todos.

En segundo lugar, las tasas de inflación y precios de los últimos 80 y primeros 90 todavía daban cifras preocupantes (>5% IPC anual) y los mensajes de contención (2), ahorro y consumo responsable podían tener su repercusión en la inversión en algo considerado aún de lujo. Invertir en tecnología era una cosa. Convencer al corredor español que invertir en la tecnología de su calzado no era invertir en lujo era un trabajo serio.

Pero la invasión de nuevas marcas era un hecho. Nike, Adidas y Reebok se asientan. Onitsuka torna en Asics

y clásicos como NewBalance Karhu comienzan a sufrir en sus carnes el empuje de los nuevos actores. La combinación de elementos técnicos con imagen, nuevas estrategias de marketing (Air Max de Nike en 1987, Trinomic de Puma en 1989), inversiones millonarias en fidelizar estrellas de cualquier deporte (Jordan para baloncesto, Agassi para tenis, etc.), abrieron al consumidor un abanico al que las marcas se subieron en masa.

La situación de las empresas españolas en el catálogo hacia que comenzaran a plantearse el segmento del corredor seriamente. Kelme sacó su 'flot' mientras que Joma desapareció de los escaparates más específicos. Los precios de zapatillas alcanzaban fácilmente las 10.000 y 12.000 pta (70, 80€). Técnicamente recordamos avances globales como el sistema de la barra Torsion de Adidas, aún vigente y que aportó una gama completa al catálogo. El sistema Gel de Asics se hizo patente de la misma manera. La década de los 90 trajo tecnología y quebraderos de cabeza, al menos hasta que no apareciesen (a) nuevos miles de corredores o (b) nuevos modos de rentabilizar la venta de calzado deportivo.

El primero de los aspectos logra remontar las cifras iniciales con el final de la década de los 90. Dos o tres entidades enfocan de un modo profesionalizado y empresarial (Last Lap, Nike) la organización de carreras de distancias asequibles como San Silvestre Vallecana o Bombers y de esto parecen beneficiarse las demás pruebas y el fenómeno general de correr por parques, calles o pistas. La vuelta del milenio trae la expansión definitiva de formatos de grandes superficies especializadas y de Internet, produciendo un aumento general de la oferta y visibilidad del calzado del deporte, una democratización del ejercicio y un descenso de los precios en determinados momentos y gamas.

4. El presente. La zapatilla global como objeto de status. Las grandes superficies y la revolución. Internet.

Es precisamente este tirón de popularización el que hace segmentar la oferta. Por un lado existen modelos de entrenamiento ocasional y básico, más económicos. La gama media adopta una posición razonable para el uso diario. La gama alta sufre asimismo una disgregación entre calzado específico (ruta, control y estabilidad, la aparición del calzado para montaña/trail) y las "supernovedades". El status comienza a importar entre los grupos de corredores-consumidores.

El catálogo alcanza su expresión máxima. Hemos podido escoger entre más de 90 modelos para este

pequeño estudio. Las variaciones dentro de las zapatillas para correr alcanzan la superespecialización: control de pronación, estabilidad, amortiguación. Calzado para entrenamiento ligero, moderado, competición, en ruta o en montaña. Hormas para corredores pesados, calzado junior, hormas para corredoras, diversos anchos y tallas y medias tallas. Dentro de cada marca, evoluciones similares. Nike tiene gamas Air, Cross Training, Nike Free para escargar y relajar el pie. Asics posee gama de serie, Gel, Speed, etc. Existen subfamilias como las sagas Kayano de Asics, Wave en Mizuno, Grid de Saucony o Supernova de Adidas. Se llega a buscar la fidelidad, la dependencia de una marca que... fabrica zapatillas que duran 600 kilómetros(!). Renovar calzado cada seis meses bajo la excusa, real, dada la resistencia del material. Las zapatillas pasan a ser complementos como bolsos, relojes o gafas de sol. Una parte sólida del presupuesto del corredor. Las marcas españolas pugnan por resistir a pesar de momentos difíciles como la quiebra técnica de Kelme en 2003 y dificultades en la auditoría (3)

¿Qué pasa con los precios? La introducción de la moneda única europea hace que los precios se disparen en España. Un informe de la Organización de Consumidores y Usuarios (OCU) correspondiente al mes de enero sw 2002 detectó un claro incremento de precios del 1,6%, con subidas generalizadas en los precios de los servicios públicos, especialmente en correos y transportes, así como en bienes de uso masivo como pan, cines y bares y cafeterías, por un redondeo abusivo al alza en la conversión a la moneda única (2). En particular el incremento generalizado de precios se situó en dos años inflacionistas. la evolución de los precios medios de la tabla muestra que de 1982 a 1992 el precio sondeado pasa de 53 a 65 € (+12€/10 años, **ratio 1.2€/año**). De 1992 a 2007 el incremento va de 65 a 106 € (+41€/15 años, **ratio 2.7€/año**). Así, tenemos un panorama en el que el aumento de consumidores, unidades de venta y posibilidades de elección por parte de consumidor no lleva a un descenso de los precios medios. Únicamente en periodos de rebajas o con los formatos más innovadores hay oportunidad de escapar a los 130 euros por par de zapatillas. En detalle, la oferta comercial se expande. En 2007 podemos estar al tanto del catálogo incluso días antes que vaya a la tienda si estamos suscritos a alguna lista de correo de una marca comercial. Saborearemos esas novedades en alguna feria del corredor de un maratón o en tiendas punteras y que están siempre al día. Podemos contrastar, como opción, las primeras impresiones de nuestros colegas corredores en los foros de Internet, en comparativas, en ... test de pruebas que algunas

marcas ofrecen (la camioneta Bowerman) para, una vez aparezcan en los escaparates, decidirnos.

Pero los escaparates han evolucionado. Tiendas especializadas han dado paso a grandes superficies especializadas. Decathlon, Forum, Decimas, ofrecen kilómetros de estanterías donde nunca falta un par para un corredor. La visión expositiva de tales cantidades de material deportivo, además, desencadena compras por impulso (la compra no planificada; las estadísticas hablan de un 50% de compras no planificadas en formatos como supermercados). La decisión de la compra del usuario de una tienda de deporte surge en el preciso momento de la compra, a la vista de complementos, ofertas tanto en textil como calzado para corredores. Las tiendas *Factory*, donde se ofrece al deportista los saldos de temporada anterior, restos rebajados, pueden parecer el lugar donde tomarse la revancha y volver a pagar precios de 1992 por calzado de 2007. Pero en la práctica son las últimas oportunidades de venta con beneficio, demostrando los márgenes que la distribución maeja. Por último, tiendas virtuales como *e-bay* han rematado la mundialización de la compra de material deportivo. No tan rentable como en otros deportes, donde los ahorros en cuadros de bicicletas o material de precisión son más grandes, pero asimismo lugar donde encontrar ese calzado específico, favorito o rebajado.

5. Conclusiones

En España la historia del calzado deportivo y de las importaciones sigue el lineal de los precios y del consumo de un país en desarrollo. Lo tardío del boom y los nuevos formatos de venta han coincidido con la expansión del *branding* (la marca, lo primero) y de comercio total. Es indudable que las zapatillas son caras, pero también lo fueron en la década de los 90. La personalización, los consejos de los vendedores o la posibilidad de encontrar complementos pugnarán por atraer consumidores. El corredor deberá, en cualquier caso, dedicar un mayor presupuesto de su gasto que hace una década.

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The Juvenile Obesity Epidemic: Strike Back with Physical Activity

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Resumen

Recent decades have seen a dramatic worldwide surge in the prevalence of juvenile obesity. While the causes of this epidemic are not clear, a reduction in the time spent on physical activities and the increase in sedentary pursuits such as TV watching or computer games are likely important factors. Enhanced physical activity is an important component of any program that focuses on weight control. Such a program should include elements that induce appreciable energy expenditure. However, the inclusion of resistance training is efficacious in the enhancement of fat-free mass. Children will not increase their activity "because it is healthy." They must see immediate gratification in becoming more active. This can be achieved by engaging the child in enjoyable activities.

Key Points

- *The prevalence of juvenile obesity is on the rise in many developed and undeveloped countries. It has reached epidemic proportions.*
- *A reduction in physical activity, mostly due to increased "screen time" (TV, Internet, computer games, video), is an important likely cause of this epidemic.*
- *Enhanced physical activity induces several beneficial effects on the health and well-being of obese children and adolescents. Less information is available regarding its effectiveness in the prevention of juvenile obesity.*
- *Several published sets of guidelines are available regarding the amount, frequency, intensity and nature of activities suitable for the general population of children and youth. However, the validation of these guidelines requires further research.*

Introduction

Determining who is overweight and who is obese

The terms "overweight" and "obesity" are often used as if they are synonymous, but they are not. Both denote excessive body weight, but obesity is a more advanced state than is overweight. The definitions and criteria of obesity depend to a great extent on the method used to determine it. Ideally, one should measure or assess percent body fat by determining skinfold thickness or underwater weight or by using techniques of dual energy X-ray absorptiometry (DEXA). Body fat in excess of 30% is often used as a criterion for obesity.

In the absence of tools to estimate percent body fat, one must resort to the simpler measurements of body weight and height. The most commonly used index of overweight and obesity, based on weight and height,

is the Body Mass Index [BMI = weight (kg) divided by height squared (m²). For adults, a BMI of 25-29 kg/m² denotes overweight, and a BMI of 30 kg/m² or more denotes obesity. These cutoff points, however, are not valid for children and adolescents. Based on data of more than 97,000 subjects from various countries, the cutoff levels for adolescents are lower than for adults, and they are even lower in children (Cole et al., 2000). For example, the obesity cutoff level for a 15-year-old boy is 28 kg/m², and for an 8-year-old boy it is 23 kg/m². The corresponding cutoff points for overweight are 23 and 18 kg/m² respectively.

In spite of the popularity of BMI, one must realize that it does not differentiate between a person whose excessive body weight is due to high body fat content and one whose excess bodyweight is attributed to a large fat-free mass. This drawback is particularly relevant for athletes, who may vary markedly in their

muscle bulk and fat-free mass. For such people, one should attempt a measurement of percent body fat.

The purpose of this article is to concisely describe the recent rapid increase in obesity among children and adolescents, to summarize the results of investigations that have studied the potential causes of the epidemic in juvenile obesity, and to briefly discuss approaches to the prevention and treatment of this disease. Most of the studies that report an increase in the prevalence of obesity used BMI data to assess obesity.

RESEARCH REVIEW

The juvenile obesity epidemic

The last three decades have seen a dramatic surge in the prevalence of juvenile obesity. (In this article "juvenile" is used collectively for children and adolescents.) For example, as seen in Table 1, the prevalence of juvenile obesity and overweight in the US increased dramatically from 1965 to 1995. The increase was faster in boys than in girls.

TABLE 1. Increase over 30 years in the prevalence of juvenile obesity, comparing data from the 1965 NHANES I and 1995 NHANES III national surveys in the US. Data from Troiano et al. (1995). Obesity was assessed according to BMI percentiles.

Gender	Age Group (years)	% Increase In Prevalence
Girls	6-11	106
Girls	12-17	69
Boys	6-11	108
Boys	12-17	146

A nationwide Canadian study showed a major increase in the prevalence of juvenile overweight and obesity between 1981 and 1996 (Tremblay & Willms, 2000). The increase appeared particularly dramatic in the younger age groups. For example, among 7-year-old boys there was a startling six-fold increase in obesity and a three-fold increase in overweight. The rate of increase in juvenile obesity is considerably greater than in Canadian adults (Tremblay et al., 2002). This fast surge of juvenile obesity occurs not only in technologically developed countries (Livingstone, 2001), but also in less developed societies in which undernutrition had previously been prevalent (Seidell, 1999). The World Health

Organization has termed this phenomenon a Global Epidemic (World Health Organization, 1997).

Possible Causes for the Obesity Epidemic

The causes of the current juvenile obesity epidemic are not clear (Bar-Or et al., 1998; Jebb & Moore, 1999; Livingstone, 2000). Conceptually, there are three possible causes: genetic mutations, increased energy intake, and decreased energy expenditure. A genetic hypothesis can be rejected because it is unlikely that mutations can be expressed in such a short time-span. One cannot exclude, however, the possibility of a gene-environment interaction in which changes in activity or food consumption are affected by a person's genetic disposition (Clément & Ferré, 2003).

In the US, increased energy intake seems unlikely as a general cause of obesity because data from the 1970s to the 1990s do not confirm an increase in total energy consumption of most 2- to 19-year-old people (Troiano et al., 2000). The only exceptions were adolescent girls, whose intakes did increase. The same survey showed a decline in the percentage of fat consumption in the diets of both genders. In contrast to the US, the emergence of juvenile obesity in less developed countries seems to accompany an increase in food consumption.

If, indeed, energy and fat intake have not increased over the recent decades, a most probable cause for the current obesity epidemic in North America is a decline in energy expenditure due to a reduction in habitual physical activity (Bar-Or et al., 1998; Troiano et al., 2000). While this hypothesis is plausible, there are insufficient data to confirm it (Jebb & Moore, 1999).

Are obese children and youth insufficiently active?

Several cross-sectional studies were conducted over the years in an attempt to document the activity behavior of obese young people compared with their non-obese peers (Bar-Or & Baranowski, 1994; Bar-Or et al., 1998). Most (Bruch, 1940; Bullen et al., 1964; Dionne et al., 2000; Pate & Ross, 1987; Waxman & Stunkard, 1980), but not all (Klesges et al., 1990; Stunkard & Pestka, 1962; Wilkinson et al., 1977) of these reports suggest that obesity coincides with a relatively sedentary lifestyle.

The possible relationship between juvenile obesity and the amount of time spent watching TV has attracted special attention. Several studies (Andersen et al., 1998; Crespo et al., 2001; Dietz & Gortmaker, 1985; Gortmaker et al., 1996), but not all (Robinson et al., 1993; Wolf et al., 1993), have shown that the risk for

being obese is strongly related to TV viewing. For example, Crespo et al. (2001) analyzed data from more than 4000 children and youth, ages 8-16 years, who took part in a 1988-1994 national US survey (NHANES III). They found that the prevalence of obesity was highest among those watching TV four or more hours daily and lowest among those watching one hour or less per day. Television viewing was positively associated with obesity among girls, even after controlling for age, race/ethnicity, family income, weekly physical activity, and energy intake (Crespo et al., 2001). Another study has shown that the likelihood of being obese is three-fold greater in adolescents who watch TV more than 5 hours/day, compared with those who watch 0-2 hours/day (Gortmaker et al., 1996) (Figure 1). The same study demonstrated that the likelihood of remission of obesity over a four-year period is considerably greater among adolescents who watch TV less than one hour/day compared with those watching 5.5 hours or more each day. The authors concluded that (even though most studies of this problem are cross-sectional, not experimental) there is a cause-and-effect relationship between the extent of television viewing and juvenile obesity.

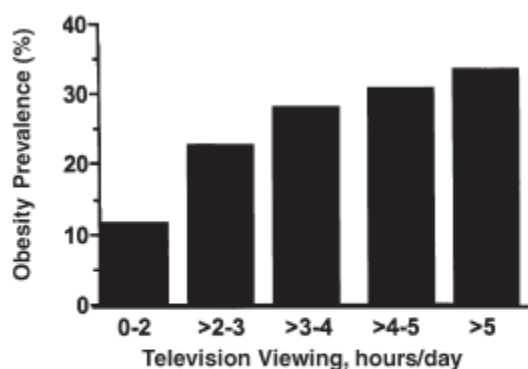


FIGURE 1. Television viewing and the likelihood of being obese. Based on a national representative sample of 746 girls and boys aged 10-15 years. Modified from Gortmaker et al. (1996).

In spite of the apparently strong relationship between television watching and juvenile obesity, there is little or no relationship between the amount of time of television viewing and the overall daily energy expenditure (Robinson et al., 1993; Taraset al., 1989). However, although data from the general population indicate no recent increase in energy consumption, it is possible that one of the effects of excessive TV viewing is over-consumption of fast-foods and other high-energy products in this population of television watchers, perhaps because of the large number of food-related commercials in prime-time programs (Story & Faulkner, 1990).

Even though there is ample evidence for low habitual activity in obese children and youth, there is a more complex relationship between obesity and total energy expenditure, which includes resting energy expenditure in addition to energy expended during physical activity (Ekelund et al., 2002). Some studies show that total daily energy expenditure (MJ/24 h) is similar in obese and nonobese subjects, or even greater among the obese (Bandini et al., 1990; Goran, 1997; Treuth et al., 1998). Nor are there differences in total daily energy expenditure between children who are disposed to future obesity and those who are not (Treuth et al., 2000).

On the assumption that a high energy expenditure in the obese is a function of their larger body mass (Maffei et al., 1993; Volpe-Ayub & Bar-Or, 2003), some authors expressed energy expenditure per unit of body mass, as the difference between total energy expenditure and resting energy expenditure, or as the ratio between total daily energy expenditure and resting energy expenditure (Physical Activity Level = PAL). Even with these corrections, the outcomes were equivocal, ranging from an inverse relationship (Bandini et al., 1990; Davies et al., 1995) to no relationship (Bandini et al., 1990; Ekelund et al., 2002; Goran et al., 1997) between adiposity and energy expenditure.

It is not easy to reconcile the lack of relationship between obesity and total daily energy expenditure. One possible explanation is that subjects in most of these studies were already obese when the observations were made. It is possible that, had they been tested during the transition period from non-obesity to obesity (i.e., when their energy balance was excessively positive), the energy expenditure of those who later became obese would have been lower.

The beneficial effects of enhanced physical activity

Although this review focuses on the effects of enhanced physical activity, one must realize that a proper management of juvenile obesity should also include nutritional changes and behavior modification (of the child and the parents) (Bar-Or et al., 1998; Epstein et al., 1996; Sothorn et al., 2000). There are many documented benefits of enhanced physical activity in juvenile obesity (Epstein & Goldfield, 1999; Gutin & Humphries, 1998)). Tables 2 and 3 summarize the overall results from the literature on the effects of enhanced physical activity on body composition and on variables other than body composition, respectively. The scope of this review does not allow a comprehensive discussion of all these effects. For more details, see recent reviews (Bar-Or et al., 1998;

Epstein & Goldfield, 1999; Gutin & Humphries, 1998; Sothorn, 2001).

TABLE 2. Summary of literature reports on effects of enhanced physical activity on body composition.

Variable	Increase	Decrease	No Change
Body Mass		X	X
Fat-Free Mass	X		X
% Body Fat		X	X
Visceral Fat		X	
Body Height			X

TABLE 3. Summary of literature reports on effects of enhanced physical activity on variables other than body composition.

Variable	Increase	Decrease	No Change
Arterial Blood Pressure		X	
Insulin Sensitivity	X		
Plasma Triglycerides		X	X
HDL Cholesterol	X		X
LDL Cholesterol		X	X
Total Cholesterol		X	X
Physical Fitness	X		
Self Esteem	X		

Body fat and body mass. The specific changes that accompany greater physical activity depend on the nature of the activity as well as any dietary changes. For example, to expend reasonable amounts of metabolic energy, a child must engage in aerobic-type activities such as team games (e.g., basketball, soccer),

brisk walking, skating, or swimming. An activity lasting 45-60 min can then yield an energy expenditure of some 200-250 kcal (Blaak et al., 1992; Gutin et al., 2002). An aerobic program may help the obese child lose body fat and total body mass (or slow down the growth-related increase in body mass). It is also likely to induce an increase in aerobic fitness. In contrast, a program that includes resistance training may not yield a reduction in body mass, but it may help preserve, or even increase, fat-free mass (Pikosky et al., 2002; Sothorn et al., 2000; Treuth et al., 1998). Without concomitant dietary changes, meaningful fat reduction may not occur (Epstein et al., 1996).

Visceral fat. In studies with adults, excessive intra-abdominal or visceral fat has been linked to coronary risk and is part of the "metabolic syndrome." There is now evidence in juveniles that enhanced physical activity of an aerobic nature is accompanied by a reduction (or slowing down of an increase) in visceral fat (Gutin et al., 2002; Owens et al., 1999). Lack of increase in intra-abdominal fat has also accompanied resistance training (Treuth et al., 1998).

Insulin resistance. The current juvenile obesity epidemic has been accompanied by a rapid increase in the incidence and prevalence of type 2 ("adult type") diabetes mellitus (Berenson et al., 1995; Pinhas-Hamiel et al., 1996). Growing numbers of obese children have high fasting insulin levels and abnormal glucose tolerance tests, suggesting high insulin resistance. The strong association between type 2 diabetes and juvenile obesity is another reason why clinicians should attempt to prevent and treat obesity in children and youths. It is now clear that programs of increased physical activity can decrease insulin resistance. However, these changes and other beneficial effects disappear once the intervention program is concluded (Ferguson et al., 1999).

Spontaneous physical activity. An important issue that has been given little attention is whether and to what extent prescribed physical activity programs may affect the spontaneous activity of the obese child, that is, the nonprescribed activity engaged in by the child. Using the doubly-labeled water technique (the "gold standard" for measurement of total energy expenditure), it has been shown that the increment in total energy expenditure during a four-week aerobic program was twice that expected from the structured cycling sessions in which the subjects participated (Blaak et al., 1992). Another study, using accelerometry, heart rate monitoring, and an interview, reported that spontaneous physical activity and energy expenditure increase on the day after a structured exercise task in the laboratory (Kriemler et

al., 1999). It thus seems that obese children may be "energized" by an enhanced physical activity program and assume a more active lifestyle. This issue needs further research.

The elements of an activity program

It is commonly assumed that for enhanced physical activities to be effective in controlling weight and adiposity, they should include a component that induces an appreciable increase in energy expenditure (Bar-Or & Baranowski, 1994; Epstein et al., 1996; Gutin et al., 2002; Sothorn, 2001). The intensity of such activities is not important if the treatment focuses on changes in body composition such as a reduction in total body fat and visceral fat. However, to induce an increase in aerobic fitness, the activities should include a high-intensity element (Gutin et al., 2002).

Unlike adults, children seldom exert themselves purely for the health benefits of exercise. They need immediate gratification from the activity, which, therefore, must have enjoyable elements. This aspect cannot be overemphasized. Furthermore, long-term maintenance of a program's benefits is more likely to occur if the activities are of a "lifestyle" nature rather than a regimented aerobics or calisthenics intervention (Epstein et al., 1994). Another important element is the reduction of time spent on sedentary pursuits, such as television viewing (Faith et al., 2001). A reduction in television time may also be efficacious in the prevention of obesity among school children (Robinson, 1999). Finally, in constructing a program

one must focus on increasing the child's motivation to become and stay active. Parents, for example, can reinforce a child's enhanced activity by token awards. In our outpatient clinic, we periodically launch motivational projects such as the Frequent Exerciser Program (in analogy to the airlines' "frequent flyer" programs), which are appreciated by young patients of all ages. In one such project, for example, patients were encouraged to accumulate "stairs" at the CN Tower (a Toronto landmark). Each 15-minute block of activities was converted into a certain amount of stairs and recorded by the child on a special form. Once the child accumulated enough stairs to "reach the top of the tower" an award was given.

Ideally, enhanced activity should become a family project, particularly for children in the first decade of life. Some practical information on how parents can become involved in enhanced physical activity of their child can be available at www.paguide.com. This website accompanies the 2002 Canada's Physical Activity Guide for Children and Youth. A special section in the site provides "Tools for Parents."

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* Para una lista completa de referencias bibliográficas consultar artículo original en:
http://www.gssiweb.com/Article_Detail.aspx?articleid=608&level=2&topic=24

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EOLOS. El entrenamiento respiratorio

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Resumen

A continuación hablaremos de uno de los entrenadores de la respiración de última generación, uso, beneficios y características.

Introducción.

Los entrenadores de la respiración de segunda generación nacieron en USA a raíz de una serie de estudios científicos realizados por varias universidades sobre los efectos de los dispositivos entrenadores de la respiración, por ejemplo: "Clinical applications of Inspiratory Muscle Training" de la Dra. Allison Mc Connello en marzo de 1992, o "el influyente "Robin Hood for the lungs? A respiratory metaboreflex that 'steals' blood flow from locomotor muscles", del Dr. Douglas R. Seals, department of Kinesiology and applied Physiology, University of Colorado at Boulder, 2001).

A raíz de estos estudios descubrieron que la forma más eficaz de entrenar los músculos involucrados en la respiración era mediante entrenadores de la respiración, de hecho la mera utilización de estos músculos durante cualquier entrenamiento deportivo (por intenso que sea) no es suficiente para su entrenamiento, solo los utiliza pero no entrena. También se descubrió que el entrenamiento realmente eficaz era el de los músculos inspiratorios (ver " Robin Hood for the lungs."), en contraposición a lo que se hacía hasta el momento con el entreno casi exclusivo de los músculos espiratorios (hinchado de globos...etc). Algunos de estos entrenadores entrenan ambas acciones en una misma respiración, ya que aparte del entrenamiento inspiratorio, el entrenamiento de los músculos de la espiración es también vital en campos como las artes escénicas, con los instrumentistas de viento o cantantes por ejemplo familiar que se dedique a la compra de material deportivo y, en concreto, material para corredores, se haya incrementado igualmente.

También se descubrió en los estudios mencionados que durante ejercicio intenso, el aporte de sangre (y así el reparto de oxígeno) a las extremidades ejecutantes es inversamente proporcional al trabajo respiratorio. En otras palabras, si la inhalación es más dura por la

carga de respiración con una resistencia añadida, el flujo de sangre a la extremidad actuante es menor.

En contraste, si la inhalación es asistida usando un ventilador, el aporte de oxígeno a la extremidad se incrementa. Es más, el aporte extra de oxígeno a la extremidad se usa para optimizar el máximo poder de dicha extremidad. Todo esto nos dice que los músculos respiratorios son capaces de robar sangre a los músculos locomotores, y así empeorar la actuación. Eso nos dice que mejores músculos respiratorios, mejor respuesta general de los músculos.

Uso y sus beneficios de los entrenadores de la respiración:

Estos entrenadores funcionan por entrenamiento por resistencia, al igual que unas pesas, pero para los músculos involucrados en la respiración. El entrenamiento consiste en largas inspiraciones y espiraciones a través del dispositivo, cada usuario con un nivel de resistencia adecuado a su estado y forma física.

Están diseñados para los ámbitos del deporte, artes escénicas (en especial instrumentistas de viento y cantantes), y afecciones varias de salud, aunque puede encontrar beneficio de su uso prácticamente cualquier persona. Sus efectos más remarcables son una mejora en la resistencia física (al aumentar la resistencia respiratoria), potencia pulmonar, y bienestar general. Básicamente el entrenador lo que hace es reproducir los efectos de un entrenamiento en altura, pero con la belleza de poder entrenarse en cualquier lugar y en cualquier momento.

Para este entrenamiento respiratorio se utilizan las pautas marcadas por los estudios en universidades. Se han descrito beneficios desde los 90 segundos diarios pero lo más aconsejable serían dos sesiones de 5 minutos al día durante las primeras semanas. Un muy buen entrenamiento es de dos sesiones diarias de 10 minutos. Resultados, en dos semanas ya se notan resultados significativos, y en un mes se pueden conseguir prácticamente resultados plenos.

Características de alguno de los entrenadores son:

- Tamaño y peso ligero ideal para llevarlo a todos lados. Caben en la palma de la mano y pesa tan solo unos pocos gramos. Se han diseñado para que sean ergonómicos, debido a los variados usos que se le dan, desde los deportistas de élite, a aficionados ocasionales, cantantes, instrumentistas, asmáticos, pacientes de EPOC, transplantados... etc.
- Regulador universal de fácil uso para entrenar a diversos niveles de resistencia desde poca hasta intensa. Así el consumidor no tiene la necesidad de comprar diferentes potenciadores para distintos niveles de resistencia o para mercados específicos (Ej. solo deportes, solo música). En un solo producto algunos de ellos suplen todas estas necesidades (muchos no, depende en gran medida de la marca).
- Boquilla ergonómica completamente profesional de silicona de alta calidad y duración (depende de la marca).
- Productos libres de farmacéuticos.
- Algunos vienen con una caja pensada para mantener tanto la higiene como para poder llevar el producto en las bolsas de deporte, bolsos, fundas de instrumentos, etc.

EOLOS y el entrenamiento de la respiración

Eolos es un producto entrenador para cualquier persona interesada en añadir el componente más esencial (respiración) en su programa de entrenamiento. Eolos está diseñado para llegar a los objetivos de todo tipo de gente activa. En adición a su papel aspirando el aire dentro y fuera de los pulmones, los músculos respiratorios (principalmente el diafragma, los músculos torácicos y los músculos abdominales) juegan un papel vital estableciendo y rotando la parte superior del cuerpo. En deportes como patinaje, boxeo y los deportes de raqueta, esta función secundaria de los músculos respiratorios tiene implicaciones obvias para el atleta que está intentando respirar tan duro como sea posible al mismo tiempo.

La demanda sobre los músculos respiratorios se incrementa enormemente sobre lo que se conoce como umbral láctico. Este rango de ejercicio está asociado con cortos pero intensas actividades y provoca que los músculos respiratorios no tengan suficiente fuerza así que muestran signos de cansancio. Sobre el nivel del umbral, la respiración se lleva a altas intensidades

debido a que el ácido láctico es estimulado como parte de la estrategia compensación del cansancio de otros músculos. Una buena (y confortable) técnica respiratoria es solo posible si sus músculos respiratorios están en buena forma. Usando un entrenador de la respiración como Eolos le dará a su respiración potencia y resistencia, haciendo las diversas actividades más cómodas y placenteras.

El trabajo asociado con la respiración limita la actividad atlética. Atletas que quieren maximizar su actuación deben de entrenar su respiración de forma específica, porque su entrenamiento normal carece en hacer esto. Usando un entrenador de la respiración tal como Eolos, incrementa la potencia y resistencia de la respiración y mejora la actuación atlética significativamente.



¿Como contribuyen los músculos inspiratorios en el proceso respiratorio?

El diafragma y los músculos de la pared del pecho actúan juntos como un fuelle para impulsar el aire dentro y fuera del pecho. Para respirar estos músculos contraen y expanden la cavidad del pecho, causando una bajada de presión por la cual el aire fluye.

Para exhalar, simplemente se relajan estos músculos inspiratorios y el pecho se contrae forzando el aire de los pulmones hacia fuera. Durante el ejercicio la exhalación es asistida por la contracción de los músculos abdominales. Así, los músculos inspiratorios toman la mayor parte del proceso respiratorio. En contraste con frecuentes observaciones de la fatiga de los músculos inspiratorios, las investigaciones nunca han identificado fatiga en los músculos espiratorios inducida por ejercicio (no así en el caso de instrumentistas de viento). Por esta razón es necesario entrenar los músculos inspiratorios. En reposo se respiran unos 12 litros de aire por minuto, y en atletas de elite esto puede llegar a los 220 litros.

¿Que provoca que los músculos inspiratorios se debiliten?

La debilidad de los músculos inspiratorios puede resultar de varias causas, incluyendo enfermedades, pero a nivel general la mayor influencia que reciben es la cantidad de ejercicio que reciben. La conocida frase *úsalo o piérdelo* se aplica bien a los músculos inspiratorios como a otros músculos como los de la piernas por ejemplo. Si se queda sin aire a causa de las escaleras, lo más probable es que tome el ascensor - con la consecuencia de que sus músculos inspiratorios reciben menos ejercicio. Hemos desarrollado a Eolos para suplir este tipo de situaciones también.

A medida de que se van debilitando los músculos inspiratorios, el nivel de ejercicio que nos lleva a una falta de respiración se vuelve más y más bajo, y si se evitan ciertos ejercicios menores (como el ejemplo del ascensor) aun más; es el círculo vicioso de la falta de respiración, falta de ejercicio, y debilidad de los músculos inspiratorios y espiratorios. Además, el uso de la medicación oral de esteroides (no los inhalados) para controlar la inflamación de pulmón en condiciones como asma y enfisema, se ha demostrado que es causa de debilidad en los músculos inspiratorios. Esta debilidad puede empeorar la función pulmonar y se puede contrarrestar con entrenamiento respiratorio.

Nota: Como decíamos, los esteroides inhalados no provocan debilidad muscular.

¿Que provoca la sensación de falta de respiración?

La sensación de falta de respiración es común en enfermedades de corazón y pulmones, pero como todos conocemos demasiado bien, también es una característica de las personas sanas. Estudios recientes demuestran que la fortaleza de los músculos inspiratorios tiene influencia directa en la potencia y resistencia de nuestra respiración así como en la mejora de la sensación de falta de aire mientras nos ejercitamos.

Si los músculos están debilitados o cansados (los músculos inspiratorios pueden cansar tanto como un 20% de la sensación general), entonces no podemos respirar tan intensamente, y respirar requiere de un gran esfuerzo; experimentamos este esfuerzo como la sensación de falta de aire.

Una comparación útil puede ser pensar en como de pesada sentimos una pesa en la repetición numero 12 y como la sentimos en la primera. De la misma forma,

si los músculos inspiratorios están cansados o debilitados, la respiración se siente más dura.

¿Cual es el Régimen de Entrenamiento Eolos?

El comprobado régimen de entrenamiento Eolos son 30 respiraciones completas dos veces al día. Cada sesión toma unos 3 minutos y se puede hacer prácticamente en cualquier sitio.

$$Eolos = 30 \times 2$$

Incluimos un manual de instrucción con cada unidad de Eolos. Se aprecian resultados palpables en tan poco como 3 semanas, con al menos resultados completos de entrenamiento en 6 meses.

¿Como afecta el ejercicio a mi respiración?

Quando escalamos o subimos escaleras, de golpe estamos expuestos a un ejercicio de alta intensidad que, para muchos de nosotros esta por encima de nuestro nivel de comodidad habitual. A estos niveles nuestra respiración está fuera de nuestra *zona de confort* y aumenta gradualmente. Este incremento súbito de trabajo en los músculos inspiratorios se percibe como falta de aire.

Con intensidades bajas y moderadas, la respiración es muy modesta, pero así como se incrementa la intensidad gradualmente, la intensidad de la respiración se incrementa de forma casi exponencial. Durante la mayor parte de nuestras rutinas diarias, nuestra respiración funciona bien dentro de su *zona de confort*. Solo cuando nos aventuramos encima de nuestro *umbral láctico* (territorio de subir montañas y escalas por ejemplo), la respiración es estimulada suficientemente por los músculos respiratorios para notar el desafío. El ejercicio por encima del umbral láctico suele ser corto e intenso. En otras palabras, su respiración no esta expuesta a un estímulo adecuado de entrenamiento por suficiente tiempo o con suficiente frecuencia para que los músculos respiratorios experimenten un entrenamiento.

Incluso si puede mantener el ejercicio de alta intensidad, se duda en los estudios de que este tipo de respiración pueda proveer de un entrenamiento adecuado para obtener máximos beneficios; es similar a ejercitar los bíceps sin pesas. No estamos diciendo que el ejercicio aeróbico no provee de ningún beneficio a sus músculos respiratorios; de hecho lo hace, pero no suficientemente para promover el potencial completo a este grupo vital de músculos. El resultado es que bajo condiciones normales, los músculos respiratorios realmente nunca se entrenan para afrontar con la *respiración dura* y esta es la razón

por la que siempre se presenta como un desafío incomodo.

Incluso si yo estoy en forma, ¿porque continuo sintiéndome con falta de aire durante el ejercicio?

La sensación de falta de aire es común en las enfermedades de pulmones y corazón, pero como todos sabemos muy bien es también una sensación usual en las personas sanas. Estudios recientes muestran que la fortaleza de los músculos inspiratorios tiene una influencia directa en la intensidad en la que podemos respirar y en la sensación de falta de aire.

Si los músculos respiratorios están debilitados o cansados (los músculos inspiratorios pueden cansar tanto como un 20% en la sensación general) entonces nosotros no podemos respirar intensamente, y respirar requiere de gran esfuerzo. Experimentamos este esfuerzo como la sensación de falta de aire.

Una analogía útil es pensar en como de más pesada se siente una pesa en su repetición doce que en la primera. De la misma forma, si los músculos inspiratorios están débiles o fatigados, la respiración es más difícil.

¿Puede la respiración durante el ejercicio afectar a otros músculos del cuerpo?

Evidencia de estudios recientes sugieren que durante ejercicio intenso, el aporte de sangre (y así el reparto de oxígeno) a las extremidades ejecutantes es inversamente proporcional al trabajo respiratorio. En otras palabras, si la inhalación es más dura por la carga de respiración con una resistencia añadida, el flujo de sangre a la extremidad actuante es menor.

En contraste, si la inhalación es asistida usando un ventilador, el aporte de oxígeno a la extremidad se incrementa. Es mas, el aporte extra de oxígeno a la extremidad se usa para optimizar el máximo poder de dicha extremidad.

Todo esto nos dice que los músculos respiratorios son capaces de robar sangre a los músculos locomotores, y así empeorar la actuación. Eso nos dice que mejores músculos respiratorios, mejor respuesta general de los músculos.

¿Puede mejorar Eolos la respiración a alta altura?

A alta altura el aire es menos denso, conteniendo menos oxígeno que a nivel del mar. A medida que vamos subiendo, el aire va perdiendo densidad.

Escalando o esquiando a alta altura, nos produce unas demandas enormes a nuestros músculos respiratorios.

Con la finalidad de compensar la poca densidad del aire, los pulmones deben de trabajar mucho más duro, y un ejercicio que a nivel del mar proporcionaría nada más que un ligero incremento en la respiración, a alta altura puede llevar su respiración al límite. A 3000 m, la cantidad de oxígeno en el aire decrece un 30 %, y a 5000 m es la mitad que a nivel del mar. Esto significa que a 1000 m se empieza a sentir falta se aire durante ejercicio moderado, y a 4000 m se siente la falta de aire en reposo.

A nivel del mar, su capacidad para ejercitarse esta limitada a la capacidad del Corazón de bombear sangre a los músculos locomotores. A alta altura, esta capacidad esta limitada a la habilidad para bombear aire dentro y fuera de los pulmones. Para poner esto en perspectiva: Mientras a nivel del mar, se respiran unos 12 litros de aire dentro y fuera de nuestros pulmones cada minuto. En lo alto del Monte Everest (8848m) se requiere de casi el máximo nivel de respiración (mas de 150 litros por minuto) solo para poner un pie delante del otro. Este nivel de respiración solo puede mantenerse por un máximo de un par de minutos cada vez.

Los seres humanos tienden a aprender por experiencia cual es el nivel apropiado de respiración para un ejercicio dado. Cuando hay un desentendimiento entre la experiencia previa y la experiencia actual (como ocurre en alta altura), uno tiene la sensación pesada de falta de aire. Además, si sus músculos respiratorios están trabajando duro, pueden estar robando sangre de las extremidades motoras en ese momento para los requerimientos de oxígeno, así empeorando la ejecución de la actividad. Finalmente todo este trabajo respiratorio puede llevar a una fatiga crónica de los músculos respiratorios, lo que llevará a la falta de aire y empeorar la ejecución.

Entrenando con Eolos antes de hacer trekking y o escalar a alta altura, o para un viaje de esquí, usted puede preparar su respiración para el rigor del incremento de la respiración, minimizar el cansancio y falta de respiración, y definitivamente mejorar la ejecución y diversión. Sin tener que pasar varias semanas haciendo mucho ejercicio a 3000m, no hay nada comparable a la habilidad de Eolos para preparar su respiración para las montañas.

Contraindicaciones:

Usado correctamente Eolos puede ser usado por prácticamente cualquier persona y no tiene efectos negativos. Muy ocasionalmente, de todas formas,

puede haber casos en que la creación de una gran presión negativa en el pecho puede empeorar algunas enfermedades existentes. Si usted está bajo medicación, sufre de alguna enfermedad (asma por ejemplo), o no está seguro de si Eolos será apropiado para usted, entonces debería de consultar con su

médico antes de empezar el entrenamiento respiratorio. Así, a menos que su doctor diga lo contrario, no debería de parar de tomar las otras medicaciones. Eolos está hecho para complementar los tratamientos existentes, no para reemplazarlos.

Stretching ...Why Should I?

Brad Walker. The Stretching Institute.

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Información suministrada por Brad Walker y The Stretching Institute.

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Resumen

This short article looks at some of the tips, tricks and helpful hints you can use to help prevent sports injury. It's been put together to answer some of the more common questions we get regarding stretching and sports injury, and details a number of useful sports injury prevention techniques. I hope it proves useful to you.

Overcoming & Preventing Sports Injury

If you're involved in the health & fitness industry, whether it be participating in your favourite sport, coaching, training or just keeping fit, you'll know how annoying and debilitating a sports injury can be. In reality, when you have a sports injury you're actually losing on two fronts. Firstly, you're losing simply because your body has been hurt and now needs time and care to repair itself. And on top of this, you're also losing the time you could have been putting into training and improving your sporting ability.

A sports injury is a bit like losing money. Not only do you lose whatever you were going to buy with that money, but you also have to work hard to make up the money you've lost. Take it from me, a sports injury is one of the most frustrating and debilitating occurrences that can happen to anyone who's serious about their health, fitness, sport or exercise.

The Cold, Hard Facts

I recently read an article titled "Managing Sports Injuries" where the author estimated that over 27,000 American's sprain their ankle every day. (and, no, that's not a typo, EVERY DAY) On top of this, Sports Medicine Australia estimates that 1 in every 17 participants of sport and exercise are injured playing their favourite sport. This figure is even higher for contact sports like Football and Gridiron. However, the truly disturbing fact is that up to 50 percent of these injuries may have been prevented.

The Professionals Secret Weapon

While there are a number of basic preventative measures that will assist in the prevention of sports

injury, there is one technique that has slowly been gaining in popularity. It's still not used as often as it should be by the average sports participant, but with the professionals using it more and more, it's only a matter of time before it starts to catch on. Before we dive into this little used technique for minimizing your likelihood of sports injury, lets take a quick look at some other techniques to help you prevent sports injury.

So, Where Do You Start?

Most people are coming to understand both the importance and the benefits of a good warm-up. A correct warm-up will help to raise body temperature, increase blood flow and promote oxygen supply to the muscles. It will also help to prepare the mind, body, muscles and joints for the physical activity to come. Click here for a detailed explanation of how, why and when to perform your warm up.

While warming-up is important, a good cool-down also plays a vital role in helping to prevent sports injury. How? A good cool-down will prevent blood from pooling in your limbs. It will also prevent waste products, such as lactic acid, building up in your muscles. Not only that, a good cool-down will help your muscles and tendons to relax and loosen, stopping them from becoming stiff and tight.

While preventative measures such as warming-up and cooling-down play a vital role in minimizing the likelihood of sports injury, other techniques such as obeying the rules, using protective equipment and plain common sense are all useful.

The One Technique to Cut Your Chance of Injury by More Than Half

So what is this magic technique? Why is it such a secret? And how come you haven't heard of it before? Well chances are you have, and also, it's not that secret and it's definitely not magic. You've probably used this technique yourself at some point or at least seen others using it. But the real question is, how dedicated have you been to making this technique a consistent part of your athletic preparation?

What is it? **STRETCHING**. Yes, stretching. The simple technique of stretching can play an imperative role in helping you to prevent the occurrence of sports injury. Unfortunately stretching is one area of athletic preparation often neglected. Do not underestimate its benefits. Don't make the mistake of thinking that something as simple as stretching won't be effective. Stretching is a vital part of any exercise program and should be looked upon as being as important as any other part of your health and fitness.

In recent time the professionals have been getting more and more serious about stretching and ultimately, their flexibility. The coaches and trainers are just starting to realize how important flexible muscles are to helping prevent sports injury. Flexibility has often been neglected in the overall conditioning of modern athletes. It's only now that its benefits are proving invaluable to all those serious about staying injury free.

How Does Stretching Prevent Injury?

One of the greatest benefits of stretching is that you're able to increase the length of both your muscles and tendons. This leads to an increased range of movement, which means your limbs and joints can move further before an injury occurs. Lets take a look at a few examples.

If the muscles in your neck are tight and stiff this limits your ability to look behind or turn your head around. If for some reason your head is turned backwards, past its' normal range of movement, in a football scrum or tackle for example, this could result in a muscle tear or strain. You can help to prevent this from happening by increasing the flexibility, and the range of movement, of the muscles and tendons in your neck.

And what about the muscles in the back of your legs? The Hamstring muscles. These muscles are put under a huge strain when doing any sort of sport which involves running and especially for sports which require kicking. Short, tight hamstring muscles can spell disaster for many sports people. By ensuring these muscles are loose and flexible, you'll cut your chance of a hamstring injury dramatically.

How else can stretching help? While injuries can occur at any time, they are more likely to occur if the muscles are fatigued, tight and depleted of energy. Fatigued, tight muscles are also less capable of performing the skills required for your particular sport or activity. Stretching can help to prevent an injury by promoting recovery and decreasing soreness. Stretching ensures that your muscles and tendons are in good working order. The more conditioned your muscles and tendons are, the better they can handle the rigors of sport and exercise, and the less likely that they'll become injured.

So as you can see, there's more to stretching than most people think. Stretching is a simple and effective activity that will help you to enhance your athletic performance, decrease your likelihood of sports injury and minimise muscle soreness.

Stretching is one of the most under-utilized techniques for improving athletic performance, preventing sports injury and properly rehabilitating sprain and strain injury. Don't make the mistake of thinking that something as simple as stretching won't be effective.

Warm up properly, and reduce the risk of sports injury!

The warm up activities are a crucial part of any exercise regime or sports training. The importance of a structured warm up routine should not be underestimated when it comes to the prevention of sports injury.

An effective warm up has a number of very important key elements. These elements, or parts, should all be working together to minimize the likelihood of sports injury from physical activity.

Warming up prior to any physical activity does a number of beneficial things, but primarily its main purpose is to prepare the body and mind for more strenuous activity. One of the ways it achieves this is by helping to increase the body's core temperature, while also increasing the body's muscle temperature. By increasing muscle temperature you're helping to make the muscles loose, supple and pliable.

An effective warm up also has the effect of increasing both your heart rate and your respiratory rate. This increases blood flow, which in turn increases the delivery of oxygen and nutrients to the working muscles. All this helps to prepare the muscles, tendons and joints for more strenuous activity.

Keeping in mind the aims or goals of an effective warm up, we can then go on to look at how the warm up should be structured.

Obviously, it's important to start with the easiest and most gentle activity first, building upon each part with more energetic activities, until the body is at a physical and mental peak. This is the state in which the body is most prepared for the physical activity to come, and where the likelihood of sports injury has been minimized as much as possible. So, how should you structure your warm up to achieve these goals?

There are four key elements, or parts, which should be included to ensure an effective and complete warm up. They are:

- **The general warm up;**
- **Static stretching;**
- **The sports specific warm up; and**
- **Dynamic stretching.**

All four parts are equally important and any one part should not be neglected or thought of as not necessary. All four elements work together to bring the body and mind to a physical peak, ensuring the athlete is prepared for the activity to come. This process will help ensure the athlete has a minimal risk of sports injury.

Lets have a look at each element individually.

1.) General warm up

The general warm up should consist of a light physical activity. Both the intensity and duration of the general warm up (or how hard and how long), should be governed by the fitness level of the participating athlete. Although a correct general warm up for the average person should take about five to ten minutes and result in a light sweat.

The aim of the general warm up is simply to elevate the heart rate and respiratory rate. This in turn increases the blood flow and helps with the transportation of oxygen and nutrients to the working muscles. This also helps to increase the muscle temperature, allowing for a more effective static stretch. Which bring us to part two.

2.) Static stretching

Static stretching is a very safe and effective form of basic stretching. There is a limited threat of injury and it is extremely beneficial for overall flexibility. During this part of the warm up, static stretching should include all the major muscle groups, and this entire part should last for about five to ten minutes.

Static stretching is performed by placing the body into a position whereby the muscle, or group of muscles to be stretched is under tension. Both the opposing muscle group (the muscles behind or in front of the stretched muscle), and the muscles to be stretched are relaxed. Then slowly and cautiously the body is moved to increase the tension of the muscle, or group of muscles to be stretched. At this point the position is held or maintained to allow the muscles and tendons to lengthen.

This second part of an effective warm up is extremely important, as it helps to lengthen both the muscles and tendons which in turn allows your limbs a greater range of movement. This is very important in the prevention of muscle and tendon injuries.

The above two elements form the basis, or foundation for a complete and effective warm up. It is extremely important that these two elements be completed properly before moving onto the next two elements. The proper completion of elements one and two, will now allow for the more specific and vigorous activities necessary for elements three and four.

3.) Sport specific warm up

With the first two parts of the warm up carried out thoroughly and correctly, it is now safe to move onto the third part of an effective warm up. In this part, the athlete is specifically preparing their body for the demands of their particular sport. During this part of the warm up, more vigorous activity should be employed. Activities should reflect the type of movements and actions which will be required during the sporting event.

4.) Dynamic stretching

Finally, a correct warm up should finish with a series of dynamic stretches. However, this form of stretching carries with it a high risk of injury if used incorrectly. It should really only be used under the supervision of a professional sports coach or trainer. Dynamic stretching is more for muscular conditioning than flexibility and is really only suited for professional, well trained, highly conditioned athletes. Dynamic stretching should only be used after a high level of general flexibility has been established.

Dynamic stretching involves a controlled, soft bounce or swinging motion to force a particular body part past its usual range of movement. The force of the bounce or swing is gradually increased but should never become radical or uncontrolled. During this last part of an effective warm up it is also important to keep the dynamic stretches specific to the athletes particular sport. This is the final part of the warm up and should

result in the athlete reaching a physical and mental peak. At this point the athlete is most prepared for the rigors of their sport or activity.

The above information forms the basis of a complete and effective warm up. However, I am well aware that this entire process is somewhat of an 'ideal' or 'perfect' warm up. I am also well aware that this is not always possible, or convenient in the real world. Therefore, the individual athlete must become responsible for assessing their own goals and adjusting their warm up accordingly.

For instance, the time you commit to your warm up should be relative to your level of involvement in your particular sport. So, for people just looking to increase their general level of health and fitness, a minimum of five to ten minutes would be enough. However, if you are involved in high level competitive sport you need to dedicate adequate time and effort to a complete warm up.