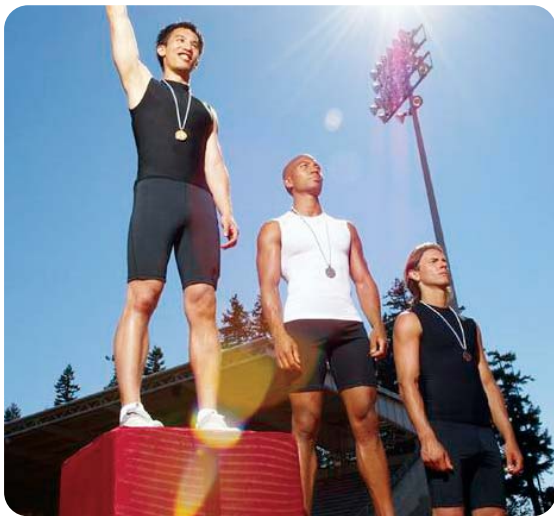




Mensana
Treat+Optimize+Prevent

Staying on Track

Even the smallest change may decide if you win. With its integrated and clinical sports medicine approach Mensana helps getting professionals achieve peak performance.



#1: 1h 03m 15s 095 - WR #2: 1h 03m 17s 751 #3: 1h 04m 01s 832

Knowing your body

You want to know:

- why you get that sugar dip after kilometer 15;
- why you are not a second faster in the finishing spurt, despite training to exhaustion;
- the reason for the instability of your left shoulder;
- and above all, how to overcome these, and optimize your performance.

Peak performance

Every sport has its own profile, and many athletes still rely on traditional assessments, nutritional regimens, and training programs. With its integrated, clinical approach and use of the latest technologies, Mensana helps getting professionals to achieve peak performance.



Your sport, your profile, your optimization program make you #1

Helping you stay on track – beyond the existing approach

An integrated and clinical approach

Manned with a multi-disciplinary team of medical doctors, equipped with the latest technologies available and dedication to peak performance, Mensana helps the individual, or group, with customized optimization programs.



The baseline - for you or the entire group

There is a solution for your off-season training optimization program, competitive campaign, rehabilitation, injury prevention or talent assessment: our Mensana Mobile Health Facility or our Mensana Hospital Health Facility.



Your profile

No two individuals, training preferences & requirements, or goals are alike, which is why the optimization program is always custom. However, some profiles are recurrent:

- a. *“A majority of athletes is anaerobically in perfect shape, but lacks the necessary aerobic capacities required in endurance sport, yet they report training intensively. While assessing respiratory and metabolic parameters, Mensana helps athletes optimizing their aerobic capacity with dedicated aerobic exercise programs.” B. Jacobs (PT, Mensana)*
- b. *“Last week, a 20y old talent got promoted to the A-squad of my preferred soccer team - lucrative professional contract included - I do not understand why: Yes, he scored a lot of goals in the youth squad and is relatively speedy, but with his underdeveloped upper body, he may not stand a chance against big and sturdy defenders.” C. Maes (PhD, Mensana)*
- c. *“My sport is seasonal: [the professional cyclism season] it typically runs from March until October; with my performance requirements, training program & dedication varying accordingly. Without proper evaluation I would never be able to work towards my peak.” K.N. (Cyclist)*
- d. *“Female runners sometimes are surprised by the side effects of high performance sports: The irregularity of their menstrual cycle during their hay day may be alarming as it could cause a lowered BMD which may result in osteoporotic fracture.” S. Poriau (MD, Mensana)*

Looking beyond traditional parameters

Optimizing performance is not a simple task, and a multiple facets approach requires looking beyond traditional parameters.

During the evaluation and optimization programs the following interrelated steps are taken:

Analysis - Anamnesis, Sampling & Recommendations

- Anamnesis: Training programs, nutritional regimens and goals are thoroughly assessed together with the individual and coach, as well as a complete evaluation of family history, lifestyle and habits.
- Sampling: Blood, saliva & urine are analyzed, focusing on lactic acid levels, triglycerides, adenosinetriphosphates (ATP) and LDL/HDL cholesterol, as are the metabolic digestion and liver function. Additionally the composition and nutritional value (calorimetry) of food may be assessed.
- Recommendations: Preceded by thorough statistical analysis of the clinical and performance assessments, the Mensana Optimization program recommendations provide proper feedback, focusing on realistic goal setting and mental coaching, topped off with regular follow-up intervals.

Analysis - Body composition and Bone health

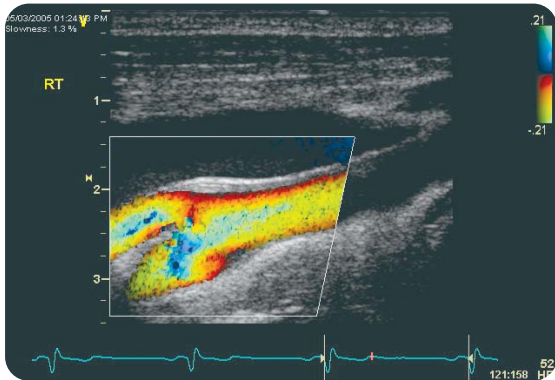
- With the Body composition assessment using Dual X-ray Absorptiometry (DXA) the fat & lean tissue mass and its distribution in various regions of interest, as well as the bone mass are assessed. As such the efficiency of the Mensana Optimization program can be evaluated enabling the individual to work towards the optimal condition and weight essential for achieving peak performance.
- In addition to Body composition, also a Fracture risk assessment - i.e. bone mineral density (BMD) test - is performed.



Your body composition, in detail.

Analysis - Ultrasound diagnostic imaging

- While DXA provides a total body “macro” image of the fat & lean tissues and the skeleton, the blood vessels, tendons, cartilage, muscle, fat and organs are visualized with Ultrasound in live “micro” 4D.
- Using Ultrasound, injuries and wearing conditions such as tendonitis may be detected with treatment initialized in the earliest stage. Also anomalies to the vital organs, such as the heart or lungs, may be accurately assessed.



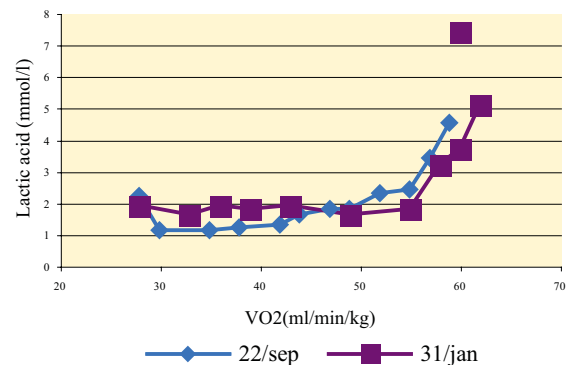
Performance - Exertion physiology

- Key to adjusting the nutritional regimens and training programs is to obtain knowledge about the metabolic rate and the function of vital organs. The sampling tests (as described above) provide us information for the gastro-intestinal function, whereas the electrocardiogram and stethoscope give us insight to the heart’s function in rest and stress, with the ergospirometer to determine pulmonary function with VO₂ and VCO₂, as well as RMR (resting metabolic rate), BMR (basic metabolic rate) and the turning points.
- The obtained information is key for two reasons: 1) it shows the medical condition and optimization possibilities, 2) interrelated to the Biomechanics and Power & Explosivity modules - it tells about the level of actual performance.



Respiratory testing on the bike treadmill at various intensities

Name:	A. C. (Cyclist)					
Date:	9/22/06					
Output (Watt)	Heart frequency (beat)	Cycling frequency (revolution)	Difficulty (Level*10)	Lactic acid (mmol/l)	VO ₂ (ml/min/kg)	Duration (min)
125	93	100	30		24	6
150	98	101	40	2.2	28	3
175	105	99	40	1.1	30	3
200	114	106	40	1.1	35	3
225	121	103	50	1.2	38	3
250	132	108	50	1.3	42	3
250	140	113	50	1.6	44	3
275	147	112	60	1.8	47	3
275	151	109	60	1.8	49	3
300	159	111	60	2.3	52	3
300	163	113	70	2.4	55	3
325	171	116	75	3.4	57	3



Performance - Biomechanics and Power & Explosivity

- During the Biomechanics and Power & Explosivity assessment modules, a variety of measurements, important to a peak performer are done, including: aerodynamic, acceleration, balance, ergonomic, equilibrium, explosivity, jump power, limberness, power (abdomen, back, limbs,...), reactivity, resistance, speed, stamina, strength - to mention just a few.
- Evaluating the actual fitness & muscular development, we can help the individual develop both central & local aerobic capacities at a proper intensities.



Performance - Equipment

The equipment list used for the Performance modules includes the following:

- Biodex power analysis, evaluating balance, equilibrium and distribution, as well as the assessment of the power in the limbs
- Tri-axial back & abdomen analysis, determining speed of movement and the power in back & abdomen
- Tri-axial accelerometer, analyzing the efficiency of movement
- Bike fitting and AV equipment, evaluation of ergonomic and adjusting to aerodynamic principles
- Running & biking treadmills, testing performance e.g. maximal anaerobic output
- Alti-trainer, for normobar hypoxia training to optimize muscular oxygen production
- Jump mats, assessing upper body power & overall equilibrium
- Electrocardiogram (described above)
- Ergospirometer (described above)

Mensana Treat+Optimize+Prevent

Peak performance is your worry and our expertise: Manned with a dedicated multi-disciplinary team of medical doctors, equipped with the latest technologies available, Mensana helps professionals to achieve their goal: peak performance!

Mensana is also a leading centre for curing and prevention, with programs for Obesity, Rheumatology, Public health awareness & evaluation, Ergonomic and Corporate health management.

1. Mens sana in corpore sano, Ancient Roman concept which relates the mental health of an individual to its healthy body - Iuvenalis 10.356
2. Your body, assessed with scientific sensibility - S. Poriau (MD, Mensana)
3. Treated, optimized & aware you achieve your goal: body health and/or peak performance... - C. Maes (PhD, Mensana)

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Plot your path with Mensana

- Would you like us to come to your event, company, school or senior house with our Mobile Mensana Health Facility?
- Would you like to visit Mensana in Sijsele-Damme, Belgium?
- Would you like to partner with Mensana?



Mensana - MCSBR

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