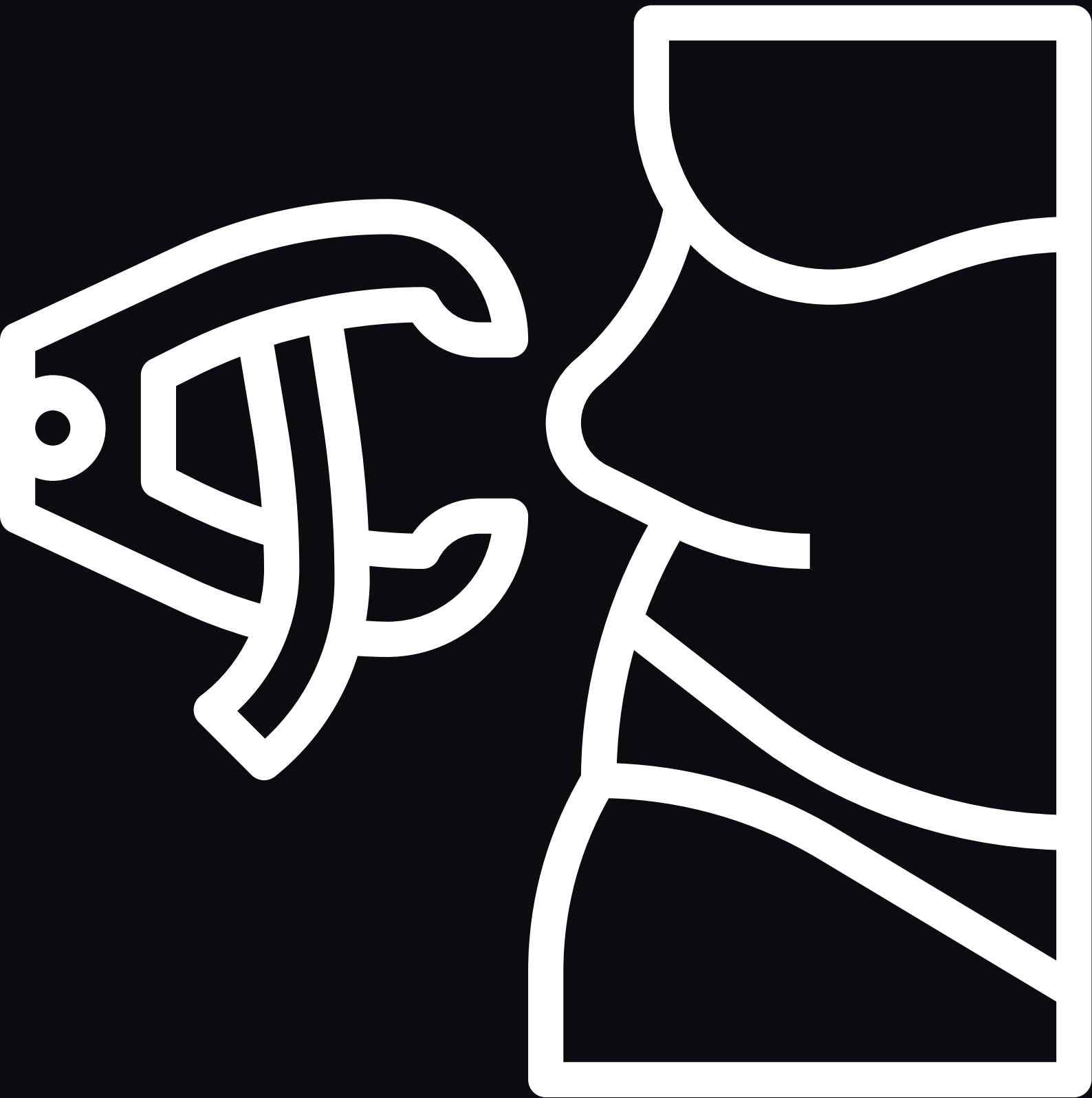




OPTIMIZE

Advanced Body Composition Analysis





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What is ISAK?

ISAK, or the **International Society for the Advancement of Kinanthropometry**, is an organization dedicated to promoting the science and practice of kinanthropometry. This field involves the study of human body composition, dimensions, shape, and proportions. ISAK provides standardized methods for obtaining anthropometric measurements, such as skinfold thickness, limb circumferences, and body lengths, ensuring consistency and reliability in assessing body composition across various populations.

At Optimize, we have two certified professionals in these measurements. Our **ISAK Level 2 certified professional is Georgios Kalonomos**, while **Panagiotis Panagiotidis holds an ISAK Level 1 certification!**





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Why Should I Get This Measurement Done? Don't Scales and Circumferences Provide Similar Results?

- **Accuracy and Reliability:** ISAK measurements provide more precise data on body composition compared to BIA and simple circumferences, which can be influenced by external factors.
- **Body Composition Assessment:** ISAK offers a detailed evaluation of fat and muscle, whereas BIA only estimates total mass, and circumferences merely measure size.
- **Standardization and Comparability:** ISAK is internationally standardized, allowing for accurate comparisons, unlike BIA and circumferences, which carry greater uncertainty.





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Why Should I Get This Measurement Done? Don't Scales and Circumferences Provide Similar Results?

- **Detailed Approach:** ISAK provides an in-depth analysis of body type and fat-muscle distribution, whereas circumferences cannot distinguish between the two, and BIA offers only an overall picture.
- **Resistance to Conditions:** ISAK is not affected by external factors such as hydration, unlike BIA and circumferences, which can be influenced by bloating or fluid retention.
- **Scientific Basis:** ISAK is scientifically validated and widely used in studies, offering greater accuracy compared to BIA and simple circumference measurements.





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Which Populations Does ISAK Measurement Address?

- **Athletes:** ISAK measurements are used to analyze body composition, track progress, and enhance performance, especially in sports where weight and body composition are critical (e.g., bodybuilding, combat sports, rowing).
- **General Population:** They assist in accurately monitoring body composition for fitness or weight loss programs, providing guidance to achieve health and fitness goals.
- **Children and Adolescents:** ISAK is employed to monitor growth and maturation, contributing to studies on the relationship between physical activity and health.





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Which Populations Does ISAK Measurement Address?

- **Clinical Populations:** Individuals with specific conditions (such as obesity, diabetes, cardiovascular diseases) can benefit from ISAK measurements, as they provide detailed data on body composition, allowing for more precise monitoring of progress in treatments or health management programs.





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How Are the Measurement Results Utilized by Optimize?

1. Personal Progress Monitoring

- **Adjustment of Fitness and Nutrition Programs:** ISAK measurements provide precise data on changes in body composition, enabling trainers and nutritionists to tailor training and nutrition plans more accurately to meet the client's needs.
- **Targeted Focus:** Based on the measurement results, specific areas of the body that require more attention can be identified, such as increasing muscle mass or reducing fat in particular regions.





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How Are the Measurement Results Utilized by Optimize?

2. Optimization of Athletic Performance

- **Athletic Objectives:** ISAK measurements provide accurate assessments of body composition, essential for achieving peak performance. In sports like bodybuilding, precise measurements of fat and muscle help athletes prepare optimally for competitions.
- **Monitoring During Preparation Periods:** During competition preparation, coaches and sports nutritionists track body composition to ensure the athlete approaches ideal performance levels, such as a specific body fat percentage for maximum strength or speed.





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How Are the Measurement Results Utilized by Optimize?

3. Clinical Intervention and Health

- **Obesity Management:** ISAK measurements enable precise calculation of fat loss and differentiation between muscle mass and fat, facilitating progress tracking and motivating patients with reliable data.
- **Nutrition and Recovery:** In cases of patients recovering from illnesses or surgeries, such as sarcopenia or cachexia, the measurements assist in designing personalized recovery programs, ensuring the maintenance or increase of muscle mass.





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How Are the Measurement Results Utilized by Optimize?

4. Children and Development

Growth Monitoring: ISAK measurements assist in tracking the growth of children and adolescents, allowing parents, coaches, and pediatricians to assess whether physical development is on track and to identify issues such as obesity or inadequate muscle development.

Education and School Programs: In schools, ISAK measurements can be utilized to monitor students' physical fitness and to create personalized physical education programs, supporting their overall physical development.





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How Are the Measurement Results Utilized by Optimize?

5. Health Risk Assessment

- **Identifying Physical Imbalances:** ISAK measurements can help identify risks associated with body fat distribution, such as visceral fat, which is linked to higher risks of cardiovascular diseases. Accurate evaluation of these factors aids in the prevention and management of health risks.



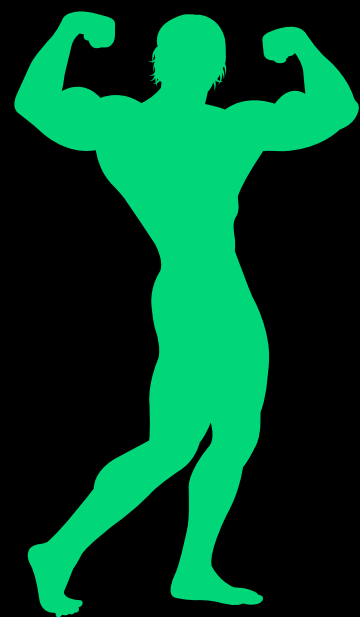


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How Are the Measurement Results Utilized by Optimize?

6. Body Composition Enhancement and Aesthetics

Bodybuilding and Physical Aesthetics: For individuals focused on their appearance and physique, such as bodybuilders, ISAK provides specific measurements to assess muscle symmetry, muscle-to-fat ratio, and overall body shape, which are essential for aesthetic improvement.





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Bonus Measurement with ISAK! FFMI

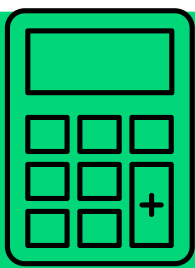
The **Fat-Free Mass Index (FFMI)** is a metric used to estimate lean body mass, calculated based on an individual's height, weight, and body fat percentage. Unlike BMI (Body Mass Index), which measures total body weight, FFMI focuses exclusively on muscle mass, making it a more accurate tool for assessing physical fitness.

Assessment of Natural Potential

FFMI is used to evaluate the extent of muscle growth that can be achieved naturally. Typically, men reach an upper limit of around 25, while women reach a maximum of about 20.

Practical Application

This index is a valuable tool for trainers and nutritionists, helping them provide realistic estimates of muscle growth goals for their clients. It also aids in tailoring training and nutrition programs to match an individual's natural potential.





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Examples of Measurements

Country	GREECE
Ethnicity (Asian=1; African-American=2; Caucasian=3)	3
Sex (male=1, female=2)	2
Sport	FITNESS
Date of Measurement	23-12-2023
Date of Birth	18-03-1974

Measure	Data	Unit	Phantom Z-Value																	
			-6.00	-4.00	-2.00	0.00	2.00	4.00	6.00	8.00	10.00									
Body Mass ®	69.8	kg					0.87													
Stretch Stature ®	168.4	cm					0.00													
Sitting Height ®	130.4	cm																		9.31
Arm Span ®	177.4	cm																		0.94
Triceps SF ®	22.0	mm																		1.53
Subscapular SF ®	15.0	mm					-0.40													
Biceps SF ®	12.0	mm																		2.07
Iliac Crest SF ®	22.0	mm																		-0.02
Supraspinale SF ®	15.0	mm																		-0.05
Abdominal SF ®	21.5	mm																		-0.47
Thigh SF ®	35.0	mm																		1.01
Calf SF ®	29.0	mm																		2.85
Arm Relaxed Girth ®	31.4	cm																		2.06
Arm Flexed and Tensed Girth ®	31.0	cm																		0.81
Waist Girth ®	81.8	cm																		2.42
Hips Girth ®	101.0	cm																		1.33
Thigh Middle Girth ®	54.3	cm																		0.37
Calf Girth ®	37.9	cm																		1.33
Humerus Breadth ®	5.0	cm																		-4.07
Bi-Styloid Breadth ®	6.0	cm																		3.05
Femur Breadth ®	9.5	cm																		0.17
Corrected Arm Girth	24.4	cm																		1.39
Corrected Thigh Girth	43.3	cm																		-0.99
Corrected Calf Girth	28.8	cm																		-0.57

Somatotype (Heath-Carter)	
Endomorphy	5.2
Mesomorphy	3.5
Ectomorphy	1.4
X	-3.9
Y	0.4

Body Mass Index (BMI)	24.6	kg/m ²
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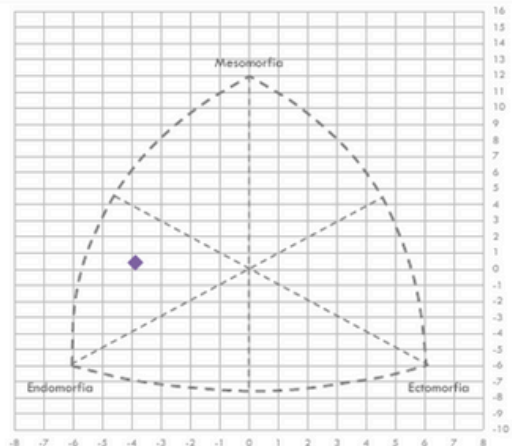
Waist/Hip Ratio	0.81
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Waist/Stature Ratio	0.49
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Sum of 8 skinfolds	171.5	mm
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Sum of 6 skinfolds	137.5	mm
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4 Compartment Body Composition		
	Percentage	Real Mass
Muscle Mass - Lee	31.27%	21.82 kg
Bone Mass - Rocha	16.34%	11.40 kg
Residual Mass	11.63%	8.12 kg
Adipose Mass - Kerr	40.77%	28.46 kg
Fat Mass - Faulkner	23.56%	16.44 kg
Fat Mass - Carter	24.87%	17.36 kg
Total Mass	100.00%	69.80 kg





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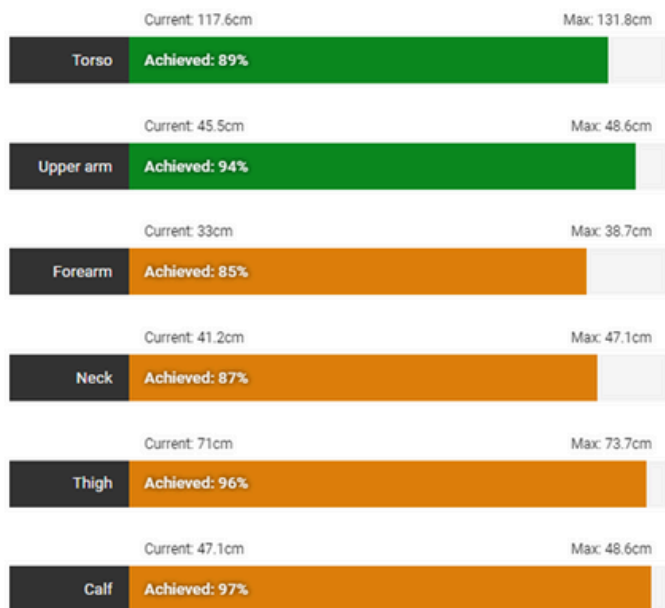
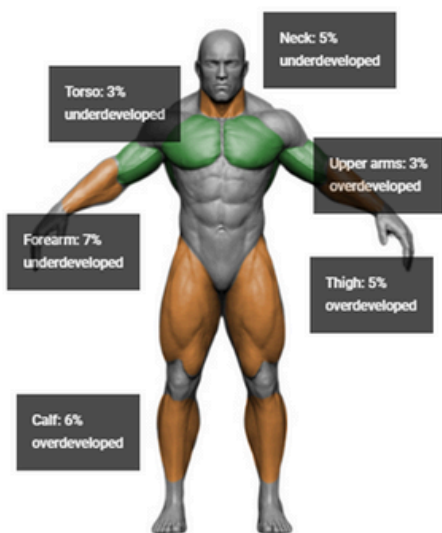
Examples of Measurements

Lean body mass left to gain (kg)

7.5

Fat mass left to lose (kg)

13.6



Maximum natural bodyweight (kg)

104.9

Normalized FFMI

27

How does your FFMI compare?

28.0	Largest natural trainee ever scientifically documented
25.4	World class natural pro bodybuilder
24.9	Upper limit for most people's genetics
24.8	Average steroid user
22.6	Internationally competitive bodybuilder
21.8	Competitive power athlete
18.9	Average Caucasian



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