



XXIX IFSO World Congress

1-4 September 2026 | Toronto, Canada

From Weight Loss To Health Gain:
Celebrating The Strength Of The Integrated
Health Team

TORONTO2026

The Future of Obesity Management:
From Weight Loss to Health Gain



ifso2026.org

What Does Each Discipline Regard As Health Gain? Looking Beyond The Scales To Chronic Disease Management

Exercise and Health Gain

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Disclosure Slide

I have no potential conflict of interest to report





A multifunctional therapeutic pillar with
clinical benefits beyond weight loss



Physical exercise is
an important
modulator



Physiological

Metabolic

Behavioral



Metabolic Modulator

Exercise induces adaptations that enhance metabolic efficiency through multiple mechanisms:

- ↑ **Fat Oxidation** (particularly in response to aerobic and endurance exercise)
- ↑ **Insulin Sensitivity** (contributing to reduced insulin resistance)
- ↑ **Resting Metabolic Rate** (supporting greater daily energy expenditure)
- ↑ **Mitochondrial Biogenesis** (increasing mitochondrial number and volume - enhancing ATP production and oxidative capacity)

The Role of Exerkines in Obesity-Induced Disruption of Mitochondrial Homeostasis in Thermogenic Fat

by Hui Shao ^{1,2,†}, Huijie Zhang ^{1,†} and Dandan Jia ^{1,*}

Metabolites 2024, 14(5), 287; <https://doi.org/10.3390/metabo14050287>

Exercise enhances hepatic mitochondrial structure and function while preventing endoplasmic reticulum stress and metabolic dysfunction-associated steatotic liver disease in mice fed a high-fat diet

Henrique Souza-Tavares, Daiana Araujo Santana-Oliveira, Isabela Macedo Lopes Vasques-Monteiro, Flavia Maria Silva-Veiga, Carlos Alberto Mandarim-de-Lacerda, Vanessa Souza-Mello*

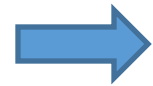
NUTRITION RESEARCH 120 (2024) 180-192

Rethinking fat Browning: Uncovering new molecular insights into the synergistic roles of fasting, exercise, and cold exposure

Fariborz Asghari Alashti ^{*,†,§}, Bahram Goliaei ^{*,**}

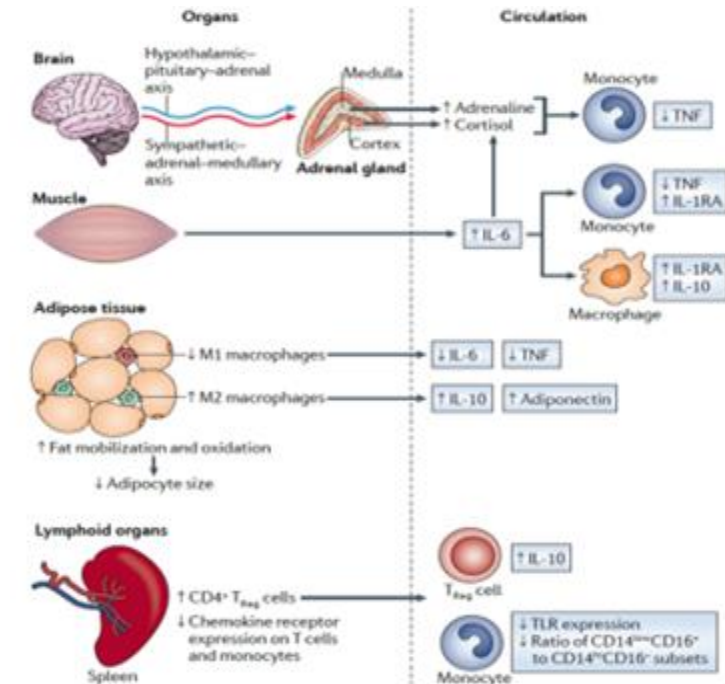
European Journal of Pharmacology 998 (2025) 177651

Immunometabolic Modulation



Exercise promotes an anti-inflammatory effect

- ↓ **Pro-inflammatory cytokines**
(TNF- α , chronic IL-6)
- ↑ **Anti-inflammatory cytokines and exerkinases**
(IL-10, IL-15, irisin, BDNF, FGF-21)
- ↑ **Adipose tissue function**



> *Am J Physiol Endocrinol Metab.* 2025 Mar 1;328(3):E478-E492. doi: 10.1152/ajpendo.00339.2024. Epub 2025 Feb 11.

Exercise alters molecular profiles of inflammation and substrate metabolism in human white adipose tissue

Maria F Pino ¹, Pieter Dijkstra ¹, Katie L Whytock ¹, Cheehoon Ahn ¹, Gongxin Yu ¹, James A Sanford ², Josh Hansen ², Chelsea Hutchinson ², Marina Gritsenko ², Paul Piehowski ², Joshua N Adkins ², Elvis A Camero ¹, Stuart Sealfon ⁴, Elena Zaslavsky ⁴, Venugopalan Nair ⁴, Steve R Smith ¹, Lauren M Sparks ¹

Systematic Review | Published: 17 October 2024

Physiology and Biochemistry

Effects of various exercise types on inflammatory response in individuals with overweight and obesity: a systematic review and network meta-analysis of randomized controlled trials

Chaofan Chen, Dong Zhang, Minyi Ye, Yanwei You, Yiling Song & Xiaoke Chen

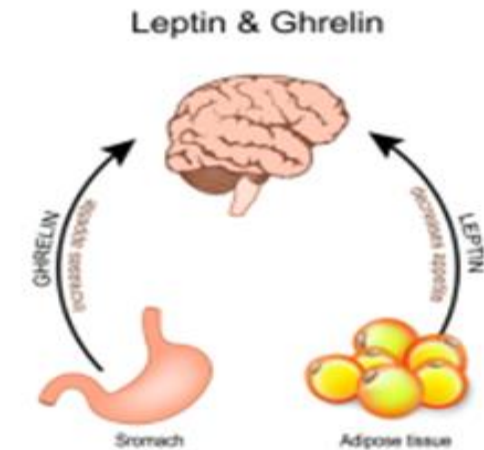
International Journal of Obesity 49, 214–225 (2025) | [Cite this article](#)



Appetite-Regulating Hormones

➔ Physical exercise induces the modulation of appetite-regulating hormones.

- ↓ Ghrelin
(primary orexigenic hormone)
- ↑ Leptin
(long-term regulation of satiety and energy homeostasis)
- ↑ Peptide YY (PYY) and Glucagon-Like Peptide-1 (GLP-1)
(enhance satiety and suppress appetite)



This contributes to improved appetite regulation and energy intake control, thereby reducing compensatory energy intake.

> Rev Assoc Med Bras (1992). 2024 Mar 15;70(1):e20230263. doi: 10.1590/1806-920220230263.
eCollection 2024.

Changes in ghrelin, GLP-1, and PYY levels after diet and exercise in obese individuals

Gülşah Akyar¹, Fatma Zuhra Umudum², Nergis Akbaş³

BMS and BMS + Exercise



BMS + Exercise Group

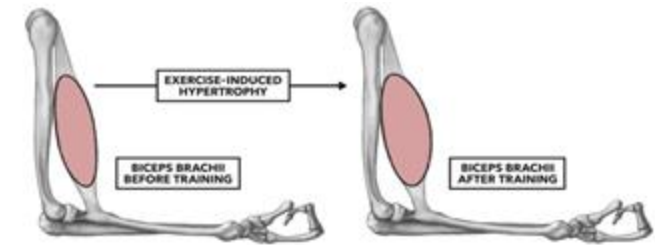
- Increased connectivity between the hypothalamus and sensory regions
- Increased connectivity in the basal ganglia, which are believed to regulate the balance between reward and inhibitory control.
- Impacted the medial hypothalamic nucleus, which plays a role in appetite suppression and increased energy expenditure



Preservation and gain of muscle mass

Especially with strength training:

- Preserves lean mass during a caloric deficit
- Can increase muscle mass
- ↑ Resting metabolic rate – EPOC (excess post-exercise oxygen consumption)
- Thermogenic effect (Exercise Activity Thermogenesis)



Without exercise, up to 25–30% of the weight lost can be lean mass



Muscle Mass vs. Muscle Functionality

[nature](#) > [scientific reports](#) > [articles](#) > [article](#)

Article | [Open access](#) | Published: 22 October 2024

Analysis of body composition, functionality and muscle-specific strength of older women with obesity, sarcopenia and sarcopenic obesity: a cross-sectional study

[Leonardo Augusto da Costa Teixeira](#), [Luana Aparecida Soares](#), [Sueli Ferreira da Fonseca](#), [Gabriela Teixeira Gonçalves](#), [Jousielle Márcia dos Santos](#), [Ângela Alves Viegas](#), [Adriana Netto Parentoni](#), [Pedro Henrique Scheidt Figueiredo](#), [Vanessa Amaral Mendonça](#) & [Ana Cristina Rodrigues Lacerda](#)

[nature](#) > [scientific reports](#) > [articles](#) > [article](#)

Article | [Open access](#) | Published: 15 February 2024

Association of physical functional activity impairment with severity of sarcopenic obesity: findings from National Health and Nutrition Examination Survey

[Shih-Wei Huang](#), [Yu-Hao Lee](#), [Chun-De Liao](#), [Reuben Escorpizo](#), [Tsai-Hon Liou](#) & [Hui-Wen Lin](#) 



It refers

It

✓ Bas

✓ Pro

In obesity, it is not just the amount of muscle an individual had, but the functionality of the muscle that determines the prognosis as well.

Having more muscle **does not** guarantee good function



Muscle Function (Quality)



It is what truly determines:

- ✓ Functional capacity
- ✓ Independence
- ✓ Mortality risk

performance



Behavioral and Psychological Modulation

↓ Stress, anxiety, depression, and cortisol

↓ Emotional overeating

↓ Sedentary lifestyle

↑ Endorphins and dopamine

- Improved treatment adherence
- Encouragement of healthy habits

[Review](#) > [AJPM Focus](#). 2023 Feb 4;2(2):100074. doi: 10.1016/j.focus.2023.100074.
eCollection 2023 Jun.

Physical Activity and Depression and Anxiety Disorders: A Systematic Review of Reviews and Assessment of Causality

Mary Njeri Wanjau ¹, Holger Möller ^{2, 3}, Fiona Haigh ⁴, Andrew Milat ^{5, 6}, Rema Hayek ⁷, Peta Lucas ⁸, J Lennert Veerman ⁹

• *Med Sci Sports Exerc*. Author manuscript; available in PMC: 2022 Aug 1.

Published in final edited form as: *Med Sci Sports Exerc*. 2021 Aug 1;53(8):1638-1647. doi: [10.1249/MSS.0000000000002619](https://doi.org/10.1249/MSS.0000000000002619) or

Randomized Trial Examining the Effect of a 12-wk Exercise Program on Hedonic Eating

Jessica L Ulrick ¹, Shira I Dunsiger ², Tiffany Leblond ¹, Korina Hahn ¹, J Graham Thomas ¹, Ana M Abrantes ¹, Laura R Stroud ², Bena R Wing ¹

> *Stress Health*. 2024 Aug;40(4):e3364. doi: 10.1002/smi.3364. Epub 2024 Jan 11.

Effects of cardiovascular exercise on eating behaviours: Accounting for effects on stress, depression-, and anger-related emotional eating in women with obesity

James J Annesi ^{1, 2}



Types of Exercise Training

Open Access Systematic Review

The Effect of Aerobic and Resistance Exercise after Bariatric Surgery: A Systematic Review

by Ece Ekici ¹, Fatih Özden ^{2,*}  and Mehmet Özkeskin ¹

Surgeries 2023, 4(3), 367-380; <https://doi.org/10.3390/surgeries4030037>

- **Objective:** To identify the effects of exercise on all aspects of health based on the most recent randomized studies.
- 120 PubMed articles were reviewed
- 11 studies met the inclusion criteria

{ Combined exercise training programs (aerobic + resistance)
RCTs



The Effect of Aerobic and Resistance Exercise after Bariatric Surgery: A Systematic Review

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Surgeries 2023, 4(3), 367-380; <https://doi.org/10.3390/surgeries4030037>

- Combined exercise programs (aerobic and resistance training) improved clinical and cardiovascular parameters, strength, muscular endurance, functionality, and cardiac and lower-limb function.
- Aerobic training promoted cardiovascular adaptations that increased Maximum Oxygen Consumption ($VO_2\text{max}$) without substantially affecting strength.
- Resistance training promoted neuromuscular adaptations that increased strength without significantly impacting $VO_2\text{max}$.



WHAT DOES EACH DISCIPLINE REGARD AS HEALTH GAIN?

Making My Patient Active



Sedentary Behavior



Physical Activity

Characterized by any muscle movement that results in calorie expenditure.



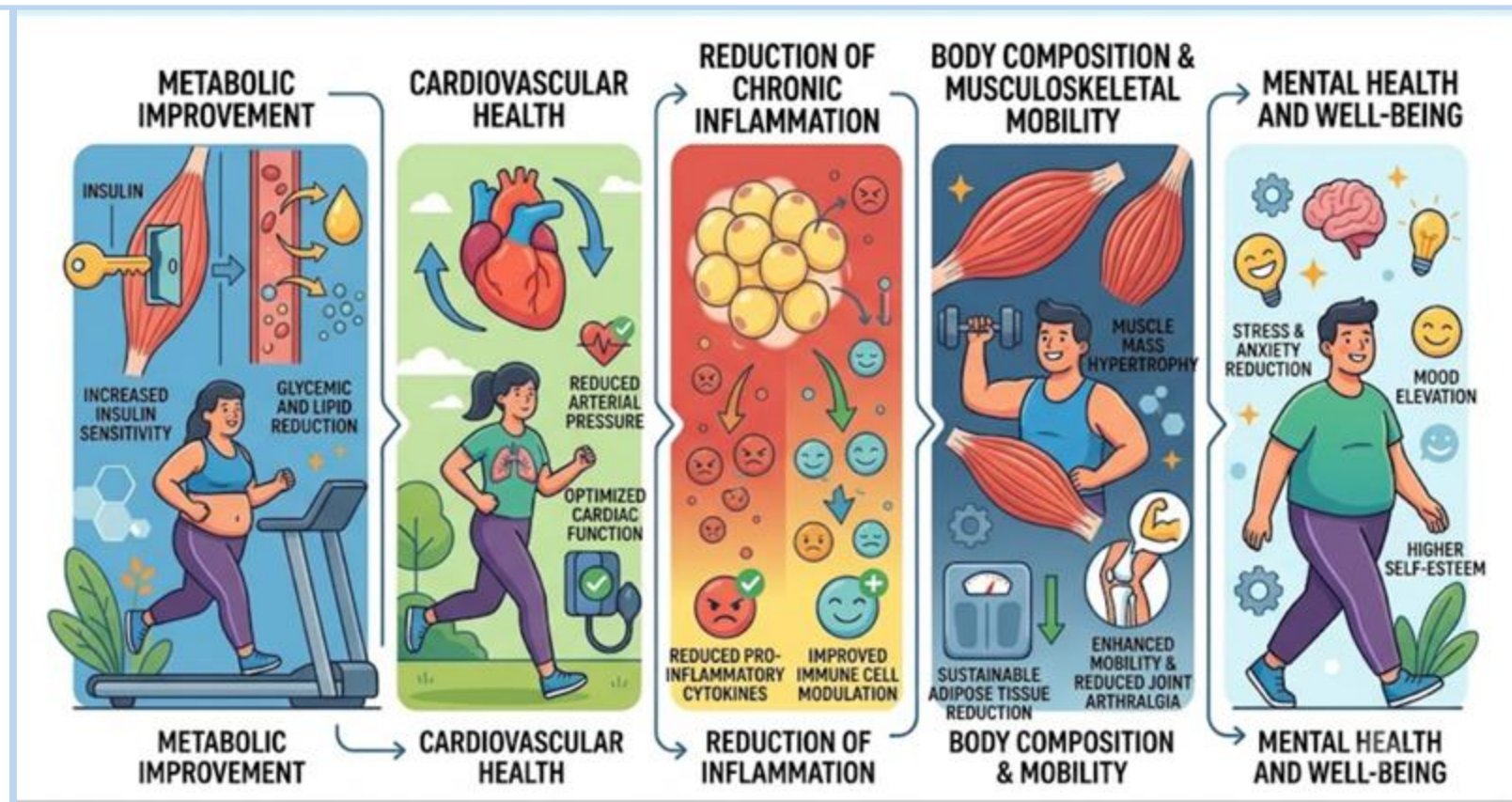
Exercise (Physical Training)

Planned, structured, and repetitive physical activity aimed at improving or maintaining a component of physical fitness.

The benefits of physical exercise are realized by people who engage in exercise continuously and systematically.



Exercise is not merely a strategy for increasing energy expenditure; it is a key therapeutic intervention that reverses the pathophysiological consequences of obesity.



Review > Surg Obes Relat Dis. 2024 Jan;20(1):98-108. doi: 10.1016/j.soard.2023.09.026.
Epub 2023 Sep 27.

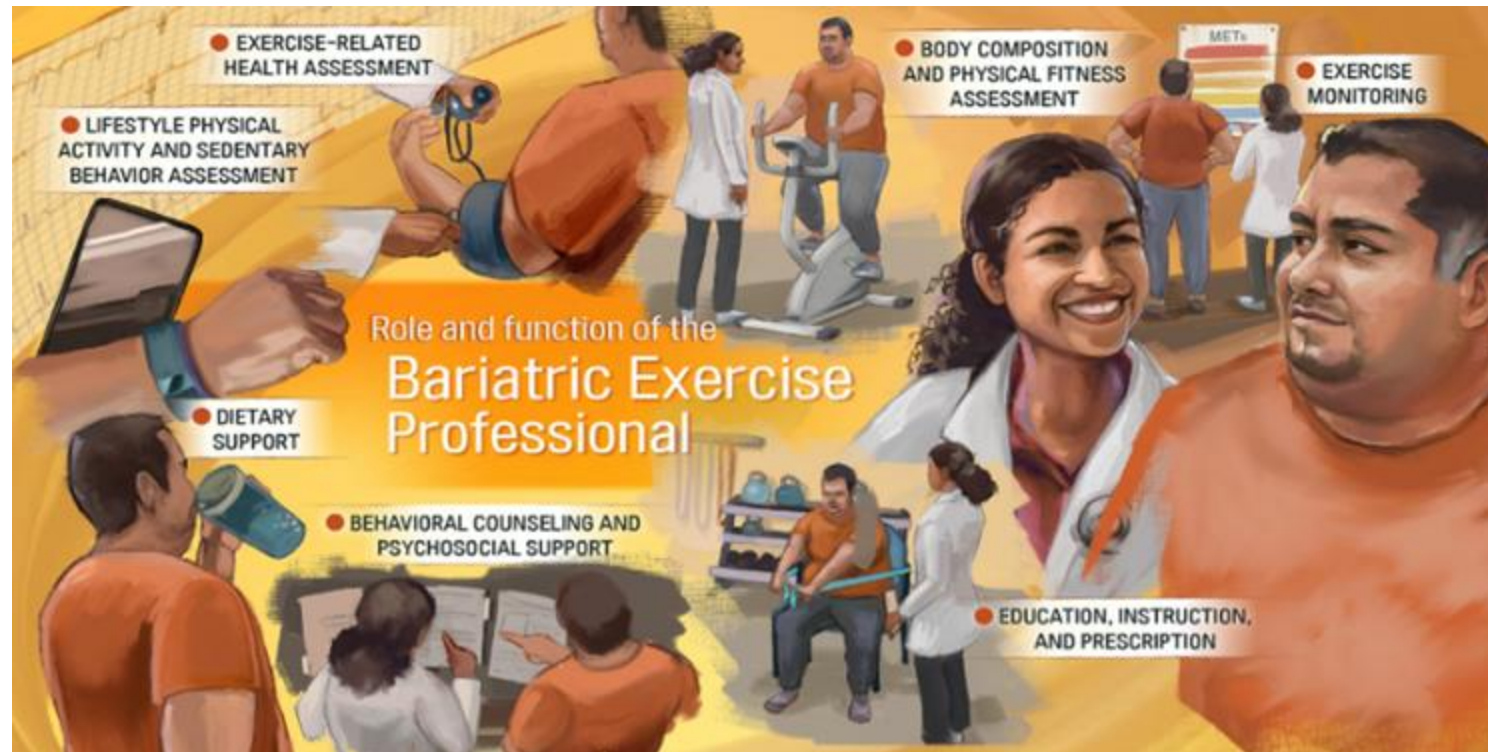
Role of the exercise professional in metabolic and bariatric surgery

Matthew A Stults-Kolehmainen¹, Dale S Bond², Laura A Richardson³, Louisa Y Herring⁴, Bethany Mulone⁵, Carol Ewing Garber⁶, John Morton⁷, Saber Ghiassi⁷, Andrew J Duffy⁷, Ethan Balk⁸, Charles J Abolt⁹, Matt C Howard¹⁰, Garrett I Ash¹¹, Susannah Williamson¹², Emilian Rejane Marcon¹³, Melissa De Los Santos⁶, Samantha Bond¹⁴, Janet Huehls¹⁵, Osama Alowaish⁶, Nina Brojan Heyman⁶, Bruno Gualano¹⁶



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*Maybe the world can come together
and teach each other*

IFSO
XXIX IFSO
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- *Discussing adherence, motivation, strategies and exercise prescription in BMS individuals is essential.*
- *To change lives we need to change behavior and physical exercise is part of this process.*





Thank You!






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TORONTO2026 The Future of Obesity Management:
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