

## 1. Datos de Contacto:

**Nombre:** Jose Eduardo Galgani Fuentes

**Cargo académico:** Profesor Asociado

**Departamento o División:** Nutrición, Diabetes y Metabolismo; UDA-Cs de la Salud. Carrera de Nutrición y Dietética.

**Nombre de su laboratorio:** Metabolismo energético

**Ubicación del Laboratorio:** Depto de Nutrición, Diabetes y Metabolismo. Piso 4. Edificio de Gastroenterología.

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## 2. Líneas de Investigación:

Mi interés actual es estudiar una potencial función endocrina del músculo esquelético sobre la función pancreática. Para explorar esta hipótesis estamos desarrollando experimentos *in vitro* en los cuales determinamos la secreción de insulina en islotes pancreáticos de ratón incubados con factores secretados a partir de células musculares humanas o de ratón. También nuestro modelo incluye el estudio de humanos y su respuesta secretora a estímulos fisiológicos y supra-fisiológicos. Nuestra expectativa es identificar algún factor soluble derivado del músculo esquelético que tenga acción a nivel pancreático. Este conocimiento expandirá nuestra comprensión de la homeostasis de glicemia y puede ayudar a la prevención y/o tratamiento de la diabetes tipo 2. Nuestro trabajo está financiado por Fondecyt y Fondos Institucionales.

## 3. Proyectos de Investigación:

Fondecyt Regular 1130217

Investigador Responsable

Assessment of peripheral glucose utilization as a determinant factor of glucose-stimulated insulin secretion in humans.

15/03/2013 – 15/3/2017

Nestle Company, Chile

Investigador Responsable

Efecto de alimentos lácteos fortificados con fitoesteroles sobre los lípidos plasmáticos en humanos.

01/09/2013 – 30/08/2014

Fondecyt Regular 1130303

Co-investigador (PI: Prof. Juan Francisco Miquel)

Identification of genetic and metabolic risk factors of cholesterol gallstone disease in the Chilean population and development of novel strategies for primary prevention.

15/03/2013 – 15/3/2017

Fondos Concursables Departamento de Nutrición, Diabetes y Metabolismo  
- PUC

Investigador responsable

Expresión de genes relacionados a la acción de hormonas tiroideas en músculo esquelético de individuos con y sin resistencia insulínica.

1/11/2012 – 30/11/2013

Fondecyt Regular 1110864

Co-investigador (PI: Prof. Teresa Sir)

Reproductive and metabolic features during the menopause transition and early post-menopausal period in PCOS women. Deepening in the pathophysiology of PCOS.

15/03/2011 – 15/3/2015

Fondecyt Regular 1120586

Co-investigador (PI: Prof. José Luis Santos)

PPAR-gamma coactivator-1 alpha and serotonin metabolism: independent and combined effects on mitochondrial function and insulin secretion of pancreatic beta cells.

15/03/2012 – 15/3/2015

Proyecto SOCHED 2011-03

Investigador responsable

Evaluación de la actividad de NADPH oxidasa-2 en células mononucleares periféricas de obesos y delgados y su potencial inhibición por vanillina

1/10/2011 – 30/9/2012

Fondecyt Iniciación 11090007

Investigador responsable

Assessment of skeletal muscle fuel metabolism in insulin-resistant, offspring of type-2 diabetic parents and insulin-sensitive subjects.

1/10/2009 – 30/9/2012

#### 4. Publicaciones:

1. **Galgani JE** & Santos JL. Insights About Weight Loss-Induced Metabolic Adaptation. Obesity 2016 (en prensa)
2. Covington JD, Tam CS, Bajpeyi S, **Galgani JE**, Noland RC, Smith SR, Redman LM, Ravussin E. Myokine Expression in Muscle and Myotubes in Response to Exercise Stimulation. Med Sci Sports Exerc. 2015 Oct 12 [Epub ahead of print]
3. Sandra de la Cruz Marcos, Beatriz de Mateo Silleras, M<sup>a</sup> Alicia Camina Martín, Laura Carreño Enciso, Alberto Miján de la Torre, **José E. Galgani** y M<sup>a</sup> Paz Redondo del Río. Propuesta de una nueva fórmula de estimación del gasto energético en reposo para población sana española. Nutr Hosp 2015;32(5):
4. Coué M, Badin PM, Vila IK, Laurens C, Louche K, Marquès MA, Bourlier V, Mouisel E, Tavernier G, Rustan AC, **Galgani JE**, Joannis DR, Smith

- SR, Langin D, Moro C. Defective natriuretic peptide receptor signaling in skeletal muscle links obesity to type 2 diabetes. *Diabetes* 2015 Aug 7
5. Pollak F, Araya V, Lanas A, Sapunar J, Arrese M, Aylwin CG, Bezanilla CG, Carrasco E, Carrasco F, Codner E, Díaz E, Durruty P, **Galgani J**, García H, Lahsen R, Liberman C, López G, Maiz A, Mujica V, Poniachik J, Sir T, Soto N, Valderas J, Villaseca P, Zavala C. Second Consensus of the Chilean Society of Endocrinology and Diabetes about insulin resistance. *Rev Med Chil* 2015;143(5):627-36
  6. De la Cruz Marcos S, De Mateo Silleras B, Camina Martín MA, Carreño Enciso L, Miján de la Torre A, **Galgani JE**, Redondo Del Río MP. Agreement between indirect calorimetry and predictive equations in a sample of Spanish healthy adults. *Nutr Hosp* 2015;32(2):888-96
  7. Cataldo LR, Cortés VA, Mizgier ML, Aranda E, Mezzano D, Olmos P, **Galgani JE**, Suazo J, Santos JL. Fluoxetine Impairs Insulin Secretion without Modifying Extracellular Serotonin Levels in MIN6  $\beta$ -cells. *Exp Clin Endocrinol Diabetes* 2015;123(8):473-8
  8. Cortés VA, Amigo L, Zanlungo S, **Galgani J**, Robledo F, Arrese M, Bozinovic F, Nervi F. Metabolic effects of cholecystectomy: gallbladder ablation increases basal metabolic rate through G-protein coupled bile acid receptor Gpbar1-dependent mechanisms in mice. *PLoS One* 2015;10(3):e0118478
  9. **Galgani JE**, Moro C. Commentary on: Increase in visceral fat per se does not induce insulin resistance in the canine model. *Obesity* 2015;23(1):4.
  10. Constanza Arancibia, **José Galgani**, Juan P. Valderas, Mauricio Morales, José Luis Santos, Felipe Pollak. Evaluación de la insulinemia post carga oral de glucosa como método diagnóstico de resistencia a la insulina. *Rev Med Chile* 2014;142(9):1106-1112
  11. Karen Cornejo, Fernando Pizarro, Eduardo Atalah y **José Galgani**. Evaluación de la ingesta dietética y excreción urinaria de sodio y potasio en adultos. *Rev Med Chile* 2014;142(6):687-695
  12. Cataldo LR, Cortés VA, **Galgani JE**, Olmos PR, Santos JL. Role of peripheral serotonin in the insulin secretion and glucose homeostasis. *Nutr Hosp* 2014;30(3):498-508
  13. **Galgani JE**, Mizgier ML, Mari A and Ravussin E. Relationship between whole-body macronutrient oxidative partitioning and pancreatic insulin secretion/ $\beta$ -cell function in non-diabetic humans. *Metabolism* 2014;63(11):1426-31
  14. Fernández-Verdejo R, Casas M, **Galgani JE**, Jaimovich E, Buvinic S. Exercise sensitizes skeletal muscle to extracellular ATP for IL-6 expression in mice. *Int J Sports Med* 2014;35(4):273-9
  15. Maria L. Mizgier, Mariana Casas, Ariel Contreras-Ferrat, Paola Llanos, and **Jose E. Galgani**. Potential role of skeletal muscle glucose metabolism on the regulation of insulin secretion. *Obes Rev* 2014;15(7):587-97
  16. Jeffrey D. Covington, **Jose E. Galgani**, Cedric Moro, Jamie M. LaGrange, Zhengyu Zhang, Arild C. Rustan, Eric Ravussin, Sudip Bajpeyi. Skeletal muscle perilipin 3 and coatomer proteins are increased following exercise and are associated with fat oxidation. *PLoS One* 2014;14:9(3):e91675
  17. **José E. Galgani**. Expansibilidad del tejido adiposo en la homeostasis metabólica. *Rev Chil Endocrinol Diabetes* 2014;7(1):14-16 (por invitación)

18. Fernando Carrasco, **José Galgani**, Marcela Reyes. Síndrome de resistencia a la insulina. Estudio y manejo. *Rev Med Clin Condes* 2013;24(5):827-837
19. Manuel Ruz, Fernando Carrasco, Pamela Rojas, Juana Codoceo, Jorge Inostroza, Karen Basfi-fer, Alejandra Valencia, Karla Vásquez, **Jose Galgani**, Alvaro Pérez, Gloria López, Miguel Arredondo, and Francisco Perez-Bravo. Zinc as a potential coadjuvant in therapy for type 2 diabetes. *Food Nutr Bull* 2013;34(2):215-221
20. Alejandra Espinosa, Cristian Campos, Alexis Díaz-Vega, **Jose E Galgani**, Nevenka Juretic, Cesar Osorio-Fuentealba, Jose L Bucarey, Gladys Tapia, Rodrigo Valenzuela, Ariel Contreras-Ferrat, Paola Llanos, Enrique Jaimovich. Insulin-dependent H<sub>2</sub>O<sub>2</sub> production is higher in muscle fibers of mice fed with a high-fat diet. *Int J Mol Sci* 2013;14(8):15740-54
21. **José E. Galgani**, Giannella Leonelli, Karla Vásquez, Alejandra Espinosa y Fernando Carrasco. Efecto de la ingesta aguda de vanillina sobre la resistencia insulínica en humanos. *Rev Chil Endocrinol Diabetes* 2013;6(1):6-11
22. **Jose E. Galgani**, Karla Vasquez, Guillermo Watkins, Aude Dupuy, Justine Bertrand-Michel, Thierry Levade and Cedric Moro. Enhanced skeletal muscle lipid oxidative efficiency in insulin-resistant vs. insulin-sensitive non-diabetic, non-obese humans. *J Clin Endocrinol Metab* 2013;98(4):E646-53
23. **Jose E. Galgani** & Giovanna Valentino. Should insulin resistance degree be taken into account for assessment of glycemic index? *Am J Clin Nutr* 2013;97:902-903 (letter)
24. **Jose E. Galgani**, David E. Kelley, Jeanine B. Albu, Jonathan Krakoff, Steven R. Smith, George A. Bray, Eric Ravussin and the Look AHEAD Adipose Research Group. Adipose tissue expression of adipose (WDT1) gene is associated with lower fat mass and enhanced insulin sensitivity in humans. *Obesity* 2013;21(11):2244-2248
25. Carrasco F y **Galgani J**. Etiopatogenia de la obesidad. *Rev Med Clin Condes* 2012;23(2):129-135
26. **Jose E. Galgani**, Bárbara Núñez and Luis A. Videla. Vanillin suppresses Kupffer cell-related colloidal carbon-induced respiratory burst activity in isolated perfused rat liver: anti-inflammatory implications. *Food Funct* 2012;3(12):1319-23
27. **Jose Galgani**, Karla Vasquez, Giannella Leonelli, Alejandra Espinosa, Hector Araya and Francisco Perez-Bravo. Assessment of red blood cell glutathione status in insulin resistance. *Appl Physiol Nutr Metab* 2012;37(5):997-1002
28. Darcy L. Johannsen, **Jose E. Galgani**, Neil M. Johannsen, Zhengyu Zhang, Jeffrey Covington and Eric Ravussin. Effect of Short-term Thyroxine Administration on Energy Metabolism and Mitochondrial Efficiency in Humans. *PLoS One* 2012;7(7):e4083
29. Maliqueo M, **Galgani JE**, Pérez-Bravo F, Echiburú B, de Guevara AL, Crisosto N, Sir-Petermann T. Relationship of serum adipocyte-derived proteins with insulin sensitivity and reproductive features in pre-pubertal and pubertal daughters of polycystic ovary syndrome women. *Eur J Obstet Gynecol Reprod Biol* 2012;161(1):56-61

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31. **Jose E. Galgani** and Eric Ravussin. Postprandial whole-body glycolysis is similar between insulin-resistant and -sensitive non-diabetic humans. *Diabetologia* 2012;55:737-742
32. **Galgani JE**, Johannsen NM, Bajpeyi S, Costford SR, Zhang Z, Gupta AK, Ravussin E. Role of Skeletal Muscle Mitochondrial Density on Exercise-Stimulated Lipid Oxidation. *Obesity* 2012;20(7):1387-93.
33. Ravussin E & **Galgani JE**. The Implication of Brown Adipose Tissue for Humans. *Ann Rev Nutr* 2011;31:33-47
34. **Galgani JE**, Smith S, Ravussin E. Assessment of EchoMRI-AHTM to Measure Human Body Composition by Comparison with Dual-energy X-ray Absorptiometry. *Int J Obes* 2011;35(9):1241-6
35. B Vandanmagsar, YH Youm, A Ravussin, **J Galgani**, RL Mynatt, E Ravussin, JM Stephens, and VD Dixit. The Cryopyrin/NALP3/NLRP3 Inflammasome Instigates Obesity-Induced Autoinflammation and Insulin Resistance. *Nature Med* 2011;17(2):179-88
36. **Jose E. Galgani** & Eric Ravussin. Effect of Dihydrocapsiate on Energy Metabolism in Humans. *Am J Clin Nutr* 2010;92(5):1089-93
37. **Jose E. Galgani**, Lilian de Jonge, Jennifer Rood, Steven R. Smith, Andrew A. Young, Eric Ravussin. Urinary C-peptide excretion: a novel alternate measure of insulin sensitivity in physiological conditions. *Obesity* 2010;18(9):1852-7
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39. Stull AJ, **Galgani JE**, Johnson WD, Cefalu WT. The contribution of race and diabetes status to metabolic flexibility in human. *Metabolism* 2010;59(9):1358-64
40. **Galgani JE**, Greenway FL, Caglayan S, Wong M, Licinio J and Ravussin E. Leptin replacement prevents weight loss-induced metabolic adaptation in congenital leptin-deficient patients. *J Clin Endocrinol Metab* 2010;95(2):851-5
41. **Galgani JE**, Ryan DH, Ravussin E. Effect of capsinoids on energy metabolism in human subjects. *Br J Nutr* 2010;103(1):38-42

##### 5. Libros y patentes:

1. **Jose E. Galgani**, Víctor Cortés and Fernando Carrasco. Carbohydrate, Fat and Protein Metabolism in Obesity. In: Rexford S. Ahima (ed). *Metabolic Syndrome. A Comprehensive Textbook*. City: Springer;2016 (en prensa)
2. **Jose E. Galgani\*** & Diego García. Role of Saturated and Polyunsaturated Fat in Obesity-Related Inflammation. In: Irfan Rahman & Debasis Bagchi (eds). *Inflammation, Advancing Age and Nutrition*. Elsevier;2014:297-308
3. **Jose E. Galgani\*** & Pamela Rojas. Role of n-6 and n-3 Polyunsaturated Fatty Acids in Type 2 Diabetes. In: Debasis Bagchi & Sreejayan Nair

- (eds). Nutritional and Therapeutic Interventions for Diabetes and Metabolic Syndrome. Amsterdam: Elsevier;2012:393-403
4. **Galgani J** and Ravussin E. Principles of Human Energy Metabolism. In: Ahima R (ed). Metabolic basis of obesity. New York: Springer; 2011:1-23