

Diego Halabi

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EDUCATION

2005 - 2011: Doctor of Dental Surgery (DDS). School of Dentistry, Universidad Austral de Chile. Valdivia, Chile. Thesis: "Logistic Regression Analysis of Risk Factors for the Development of Alveolar Osteitis".

2012 - 2017: Doctor of Philosophy (PhD) in Medical Sciences. Faculty of Medicine, Universidad Austral de Chile. Valdivia, Chile. Thesis: "Maternal chronodisruption throughout pregnancy impairs glucose homeostasis and adipose tissue physiology in the offspring".

WORK EXPERIENCE

2018 - present. Assistant Professor, School of Dentistry, Universidad Austral de Chile. Valdivia, Chile. Resol.106/2018.

2012 - 2017. Adjunct Professor, Faculty of Medicine, Universidad Austral de Chile, Valdivia, Chile.

2018 - present. Referee, Subdirector of Human Capital. National Agency for Research and Development (ANID), Santiago, Chile.

GRANTS

2022 - 2023, VIDCA-INID210009-03. Melatonin in Chilean berries: a chronobiotic gift of nature. **Associate Investigator.**

2019 - 2021, FONDECYT 11190711. A white and brown balance of obesity; developmental programming of adipose tissue by chronodisruption. **Principal Investigator.**

2018 - 2020, FONDEF ID17AM0043. The fountain of youth: development of an antioxidant, anti-inflammatory and neuroregenerative supplement derived from hops for brain rejuvenation. **Postdoctoral Researcher.**

SCIENTIFIC PUBLICATIONS

Soto M, Poblete MT, Ehrenfeld P, **Halabi D**. Prognostic Value of Neutrophil-to-Lymphocyte Ratio and Tumor-Infiltrating Lymphocytes (TILs), for Patients with Triple-Negative Breast Cancer. Cancer Investigation. 2026 Jan 12;44(4). doi: 10.1080/07357907.2025.2612595

Mendez N, Corvalan F, **Halabi D**, Noriega H, Ehrenfeld P, Torres-Farfan C. Sex-Specific Metabolic Effects of Gestational Chronodisruption and Maternal Melatonin Supplementation in Rat Offspring. Journal of Pineal Research. 2024 Nov;76(8):e70015. doi: 10.1111/jpi.70015

Méndez N, Corvalan F, **Halabi D**, Ehrenfeld P, Maldonado R, Vergara K, Seron-Ferre M, Torres-Farfan C. From gestational chronodisruption to noncommunicable diseases: Pathophysiological mechanisms of programming of adult diseases, and the potential therapeutic role of melatonin. Journal of Pineal Research. 2023 Aug 31;e12908. doi: 10.1111/jpi.12908

Maher A, Muñoz DN, Pavicic MF, González M, Ehrenfeld P, **Halabi D**, Muñoz-Kramm A, Muñoz H. Difference in Receptor Activator of Nuclear Factor κ B Expression in Tumoral Tissue by

Different Periodontal Pathogens. *International Journal of Morphology*. 2023 Jan; 41(2):431-6. doi: <http://dx.doi.org/10.4067/S0717-95022023000200431>

Mendez N, **Halabi D**, Salazar-Petres ER, Vergara K, Corvalan F, Richter HG, Bastidas C, Bascur P, Ehrenfeld P, Seron-Ferre M, Torres-Farfan C. Maternal melatonin treatment rescues endocrine, inflammatory, and transcriptional deregulation in the adult rat female offspring from gestational chronodisruption. *Frontiers in Neuroscience*. 2022 Nov 23;16:1039977. doi: 10.3389/fnins.2022.1039977.

Bernal-Rivas C, Llamunao-Tropa A, Reyes-Barría A, **Halabi D**, Pavicic F, Ehrenfeld P, Martínez-Huenchullán S. Effects of exercise on irisin in subjects with overweight or obesity. A systematic review of clinical studies. *Nutricion Hospitalaria*. 2022 Dec 20;39(6):1389-1396. doi: 10.20960/nh.04202.

Richter HG, Mendez N, **Halabi D**, Torres-Farfan C, Spichiger C. New integrative approaches to discovery of pathophysiological mechanisms triggered by night shift work. *Chronobiology International*. 2022 Feb;39(2):269-284. doi: 10.1080/07420528.2021.1994984.

Halabi D, Richter HG, Mendez N, Kaehne T, Spichiger C, Salazar E, Torres F, Vergara K, Seron-Ferre M, Torres-Farfan C. Maternal chronodisruption throughout pregnancy impairs glucose homeostasis and adipose tissue physiology in the male rat offspring. *Frontiers in Endocrinology*. 2021 Aug 16;12:678468. doi: 10.3389/fendo.2021.678468.

Halabi D, Ehrenfeld P, Mendez N, Richter HG, Torres-Farfan C. Fetal programming of adipose tissue function by gestational chronodisruption. *Sleep Science*. 2020 Jul; 13(Supl.2):51-8. doi: 10.5935/1984-0063.20200014

Mendez N, Torres-Farfan C, Salazar E, Bascur P, Bastidas C, Vergara K, Spichiger C, **Halabi D**, *et al*. Fetal programming of renal dysfunction and high blood pressure by chronodisruption. *Frontiers in Endocrinology*. 2019 Jun 6;10:362. doi: 10.3389/fendo.2019.00362

Silva ME, Lange S, Hinrichsen B, Philp A, Reyes CR, **Halabi D**, *et al*. Pericytes Favour Oligodendrocyte Fate Choice in Adult Neural Stem Cells. *Frontiers in Cellular Neuroscience*. 2019 Mar 27;13:85. doi: 10.3389/fncel.2019.00085

Segura C, **Halabi D**, Navarro N. Design and Validation of a Basic Dental Psychomotor Skills Test for Novice Dental Students. *Journal of Dental Education*. 2018 Oct;82(10):1098-1104. doi: 10.21815/JDE.018.111

Salazar E, Richter H, Spichiger C, Mendez N, **Halabi D**, Vergara K, Alonso-Vasquez P, Corvalan F, Azpeleta C, Seron-Ferre M, Torres-Farfan C. Gestational chronodisruption leads to persistent changes in foetal and adult adrenal clock and function. *The Journal of Physiology*. 2018 Dec;596(23):5839-5857. doi: 10.1113/JP276083

Halabi D, Escobar J, Alvarado CA, Martinez NM, Muñoz C. Chlorhexidine for prevention of alveolar osteitis: randomised clinical trial. *Journal of Applied Oral Science*. 2018 May;26:e20170245. doi: 10.1590/1678-7757-2017-0245

Mendez N & **Halabi D**, Spichiguer C, Salazar E, Vergara K, Alonso-Vasquez P, Carmona P, Sarmiento J, Richer H, Seron-Ferre M, Torres-Farfan C. Gestational chronodisruption impairs circadian physiology in rat male offspring, increasing the risk of chronic disease. *Endocrinology*. 2016 Dec;157(12):4654-4668. doi: 10.1210/en.2016-1282

Halabi D, Escobar J, Muñoz C, Uribe S. Logistic regression analysis of risk factors for the development of alveolar osteitis. *Journal of Oral and Maxillofacial Surgery*. 2012 May;70(5):1040-4. doi: 10.1016/j.joms.2011.11.024

Ruiz C, Ulloa N, **Halabi D**, Muñoz H. Methodological quality of orthodontic clinical trials, 2012 - 2016. *Avances en Odontoestomatología*. 2018. Jun;31(20):34-43. doi: 10.22592/ode2018n31a4

Villa J, Meier R, Ruiz P, **Halabi D**. Comparison of marginal adaptation between a monoincremental resin with sonic activation and a conventional resin. *Journal of Oral Research*. 2015. Dec; 4 (6), 387-392. doi: 10.17126/joralres.2015.074

Miranda S, Gayoso C, Ruiz P, **Halabi D**. Prevalence of neuropathic symptoms in patients referred for temporomandibular disorder in a Chilean hospital, 2014-2015. *Journal of Oral Research*. 2015 Aug; 4 (4), 263-269. doi: 10.17126/joralres.2015.051

Juárez I, Hernández M, Letelier C, **Halabi D**, Araneda C. Association between abdominal obesity and periodontal disease. Cross-sectional study. *Journal of Oral Research*. 2015 April; 4(2): 95-102. doi: 10.17126/joralres.2015.021

COMMENTED PAPERS

Varcoe T. Timing is everything: maternal circadian rhythms and the developmental origins of health and disease. *J Physiol*. 2018 Dec;596(23):5493-5494. doi: 10.1113/JP276992.

Congiusta MA, Veitz-Keenan A. Study confirms certain risk factors for development of alveolar osteitis. *Evident Based Dentistry*. 2013 Sep;14(3):86. doi: 10.1038/sj.ebd.6400954.

El-Kweifi O, Valdez E, Ellis E. CAT of the month. Risk of developing alveolar osteitis post-operatively following dental extraction is positively correlated to smoking (UT CAT #2470). *Texas Dental Journal*. 2013 Aug;130(8):703.

CONFERENCES (Last 5 Years)

Mendez N, Corvalan F, **Halabi D**, Noriega H, Ehrenfeld P, Torres-Farfan C. "Gestational chronodisruption and its role in fetal programming of non-communicable diseases". X Meeting of the Latin American Regional Society for Maternal-Fetal Interaction and Placenta (SLIMP), Maceió, Brazil, 2024.

Sanhueza K, Mendez N, Corvalan F, **Halabi D**, *et al*. "Gestational Chronodisruption and its Impact Inflammaging: Differential Metabolic Inflammatory Profiles In Male and Female Offspring". V Meeting of the Latin American Regional Society for Developmental Origins of Health and Disease (LA-DOHaD), Valdivia, Chile, September 2023.

Halabi D, Corvalán F, Méndez N, *et al*. Fetal programming of obese phenotype induced by artificial light at night is rescued by maternal melatonin treatment. 48th Fetal and Neonatal Physiological Society (FNPS) Meeting, Montesilvano, Italy, September 2022.

Halabi D, Trafian V, Bascur P, *et al*. Impact of chronodisruption during gestation on vascular function and oxidative stress in adult rats. 48th Fetal and Neonatal Physiological Society (FNPS) Meeting, Montesilvano, Italy, September 2022.

Valenzuela C, Rivera P, Méndez N, **Halabi D**, *et al*. Bioethical Reports of Animal Studies published in Dental Journals. International Association for Dental Research (IADR) Chilean Division 2021 Meeting, Virtual, August 2021.

Rivera FJ, Silva ME, Lange S, Hinrichsen B, Philp AR, Reyes CR, **Halabi D**, *et al.* Soluble factors derived from brain pericytes promote neural stem cells to generate oligodendrocytes. XIV European Meeting on Glial Cells in Health and Disease (GLIA), Porto, Portugal, July, 2019.

Halabi D, Mendez N, Ehrenfeld P, *et al.* Maternal Chronodisruption During Pregnancy Impairs Adipose Tissue Proteome in the Adult Offspring. XV Latin American Symposium on Chronobiology (LASC), Colonia Del Sacramento, Uruguay, October, 2019.

Mendez N, **Halabi D**, Ehrenfeld P, *et al.* Gestational Circadian Disruption by Light, Makes Vulnerable to Disease Development. XV Latin American Symposium on Chronobiology (LASC), Colonia Del Sacramento, Uruguay, October, 2019.

Cortez F, Pérez F, Vieira N, **Halabi D**. Knowledge and attitudes of professional basketball players about dentoalveolar trauma and use of mouthguard, south division of Chile, 2018. IADR Young Researchers Symposium, Santiago, Chile, July 2019.

Halabi D, Salazar E, Mendez N, *et al.* Gestational chronodisruption induces metabolic syndrome phenotype in the rat offspring. XXXIII Annual Meeting of the Chilean Society of Physiological Sciences - International Society for Heart Research, Huilo-Huilo Biological Reserve, Chile, August, 2018.

Torres-Farfan C, Corvalan F, **Halabi D**, *et al.* Maternal melatonin treatment prevents deleterious effects of gestational chronodisruption in rat offspring. XXXIII Annual Meeting of the Chilean Society of Physiological Sciences - International Society for Heart Research, Huilo-Huilo Biological Reserve, Chile, August, 2018.

SPEAKER (Last 5 Years)

Circadian rhythm mismatch: impact on nutritional health and obesity. XXIV SOCHINUT Nutrition Congress. Concepción, Chile, 2024.

The Pulse of Light: Synchronization of Physiology Through Circadian Rhythms. IV National Conference on Oral Physiology. Universidad de la Frontera, Temuco, Chile, 2024.

Healthy lifestyle beyond diet and exercise: impact of circadian rhythms. XXXIV Chilean Congress of Endocrinology and Diabetes SOCHED. Viña del Mar, Chile, November 2023.

Perio-systemic link: Periodontitis and obesity, biological mechanisms explaining the plausibility of this association. Periodontal and Regenerative Medicine Symposium (Chilean Society of Periodontology SPCh). Santiago, Chile, November 2023.

At the Beat of Dentistry: Understanding biological rhythms and their impact on clinical care. I Clinical Research Conference in Dentistry and Science in the South (International Association for Dental Research IADR). Valdivia, Chile, April 2023.

Chronodisruption and future consequences in the fetus. VIII Course for Specialists 'The Future of Sleep' and I Course for Primary Care. Chilean Society of Sleep Medicine SOCHIMES, Santiago, Chile, September 2021.

Biological clocks in Dentistry: a new factor in the gears of health. XXXII International Association for Dental Research IADR, Santiago, Chile, June, 2020.

Of clocks and energy, effect of gestational chronodisruption on the metabolism of offspring - Implications for Dentistry. IADR Young Researchers Symposium, Santiago, Chile, July, 2018.

THESIS ADVISING AND MENTORSHIP (Last 5 Years)

Valentina Llanca. “Effect of periodontitis-derived exosomes on the inflammatory status of adipose tissue”. **Co-advisor** (Master’s Thesis). Faculty of Dentistry, Universidad de los Andes, 2023.

Carlos González & Sigrid Marín. “Effect of periodontitis-derived exosomes on the lipolytic activity of adipose tissue”. **Advisor** (Undergraduate Thesis). School of Dentistry, Universidad Austral de Chile, 2023.

Paula Cárcamo & Aylinn Fuentealba. “Effect of a mouthwash based on Chilean berries as an adjuvant in periodontal treatment: randomized clinical trial”. **Advisor** (Undergraduate Thesis). School of Dentistry, Universidad Austral de Chile, 2023.

Sofía Parra. “Impact of artificial light at night during pregnancy on the browning capacity of adipose tissue in adulthood”. **Advisor** (Undergraduate Thesis). School of Medical Technology, Universidad Austral de Chile, 2023.

Jazira Abraham. “Frequency and characterization of post-surgical complications in cleft lip and palate patients at Gustavo Fricke Hospital, Chile”. **Advisor** (Undergraduate Thesis). School of Dentistry, Universidad Austral de Chile, 2023.

Pablo Uribe & Juan Cuevas. “Self-perceived mental health during the COVID-19 pandemic among 4th to 6th-year dental students at a Chilean university in 2022: a descriptive study”. **Co-advisor** (Undergraduate Thesis). School of Dentistry, Universidad Austral de Chile, 2022.

Paulina Rivera & Constanza Valenzuela. “Quality of bioethical reporting in animal studies published in dental journals in the period 2016-2020”. **Co-advisor** (Undergraduate Thesis). School of Dentistry, Universidad Austral de Chile, 2021.

Daniela Vera & Adriana Runiahue. “Characterization of animal models used for dental research”. **Advisor** (Undergraduate Thesis). School of Dentistry, Universidad Austral de Chile, 2021.

Gabriela Peña & Sebastián Leiva. “Reporting of sample size calculation in randomized clinical trials published in scientific dental journals”. **Advisor** (Undergraduate Thesis). School of Dentistry, Universidad Austral de Chile, 2021.

Cristina Sepúlveda. “Economic loss due to non-attendance of scheduled users in the Collico Family Health Center, Valdivia”. **Advisor** (Master of Business Administration). Faculty of Economic and Administrative Sciences, Universidad Austral de Chile, 2021.

Karla Martínez. “Fetal origin of low-grade chronic inflammation in obesity: effect of gestational chronodisruption”. **Advisor** (Bachelor of Science Thesis). Faculty of Science, Universidad Austral de Chile, 2021.

Katiushka Sanhueza. “Fetal programming of non-communicable diseases and its relationship with gestational chronodisruption: a review of associated epigenetic mechanisms and evidence of reprogramming with melatonin”. **Advisor** (Bachelor of Science Thesis). Faculty of Science, Universidad Austral de Chile, 2021.

INNOVATION AND TECHNOLOGY TRANSFER

EvaLumina (Principal Inventor): Automated Multiplatform Evaluation System with Optical Mark Recognition (OMR) and Local Algorithmic Validation. Desktop application developed entirely in Python (CustomTkinter) designed to replace legacy correction systems. *Technology Disclosure Form submitted to the Technology Transfer and Licensing Office (OTL), Universidad Austral de Chile.*

Clinical Sterilization Management Platform (Project Director / Developer): Development and implementation of the Minimum Viable Product (MVP) for the comprehensive management of the sterilization center at the UACH dental clinic. Web system built to replace physical voucher management, autonomously deployed on a local headless Linux server to guarantee high security and institutional availability.

UNIVERSITY SERVICE

2024 - present: Director, Institute of Odontostomatology (Resol. 101/2024), Universidad Austral de Chile.

2021 - present: Member of the Self-Evaluation Commission for CNA Accreditation of the Dentistry Career (Resol. 007/2022 and 024/2025), Universidad Austral de Chile.

2021 - 2025: Member of the Dental School Council (Resol. 043/2021 / Res. Int. 025/2025), Universidad Austral de Chile.

2020 - 2023: Director, Honors Program in Medical Research (Resol. 019/2020), Faculty of Medicine, Universidad Austral de Chile.

2019 - 2020: Director, Institute of Odontostomatology (Resol. 257/2019), Universidad Austral de Chile.

2018 - 2019: Research Coordinator (Resol. 371/2018), School of Dentistry, Universidad Austral de Chile.

AWARDS AND FELLOWSHIPS

2019: Sleep Science prize to the Best Presentation at XV Latin American Symposium on Chronobiology (LASC). Brazilian Sleep Society. Sao Paulo, Brazil.

2016: Doctoral Thesis Completion Fellowship. Post-Graduate Studies Directorate, Universidad Austral de Chile (Resol. 118/2016). Valdivia, Chile.

2012 - 2016: Graduate School Fellowship. Faculty of Medicine, Universidad Austral de Chile. Valdivia, Chile.

PEER REVIEW AND SCIENTIFIC COMMITTEES

2020 - present: Review Editor, Frontiers in Oral Health, Frontiers Media, Lausanne, Switzerland.

2018 - present: Reviewer of full Grants and Scholarships submitted to Medical Science Panel Board, National Research and Development Agency (ANID), Santiago, Chile.

2016 - present: Reviewer of full papers submitted to BMC Oral Health, Frontiers in Endocrinology, and BMJ Case Reports.

SCIENTIFIC, TECHNOLOGICAL, AND INNOVATION COMPETENCIES

Translational Research and Clinical Epidemiology

- **Scientific Design and Methodology:** Leadership in translational and epidemiological research. Design of clinical trials, observational studies, and systematic reviews (Cochrane certification).
- **Biomedical Sciences and Physiology:** Solid experience in chronobiology, metabolic physiology, and fetal programming studies.

- **Laboratory and Surgical Techniques:** Advanced handling in cell culture and experimental surgery techniques (in vivo models in humans and rodents).

Data Science and Technological Infrastructure

- **Quantitative Analysis and Modeling:** Proficiency in R+ (tidyverse), Python, and SQL. Advanced use of RStudio, GraphPad, G*Power, and SPSS for advanced biostatistical analysis.
- **Software Development (Full-Stack):** Python, FastAPI (API development), interface design with CustomTkinter. Fluid experience in agile development workflows assisted by Artificial Intelligence.
- **Systems Administration:** Advanced level in Linux ecosystems (daily user of Arch Linux). Configuration, administration, and deployment of services on local headless servers.
- **Scientific Communication and Reproducibility:** L^AT_EX, RMarkdown (generation of dynamic and automated documents), HTML.