

# Diego Halabí

Doctor of Dental Surgery, PhD on Medical Science

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## HIGHER EDUCATION

2005 - 2011: Doctor on 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 on Medical Science (**PhD**). Faculty of Medicine, Universidad Austral de Chile. Valdivia, Chile. Thesis: Maternal chronodisruption throughout pregnancy impairs glucose homeostasis and adipose tissue physiology in the offspring.

## EXPERIENCE

### ACADEMIC

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

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

2006 - 2011. Undergraduate Teaching Assistant (Human Anatomy, Head and Neck Anatomy, Clinical Periodontology and Research Methods). Faculty of Medicine, Universidad Austral de Chile, Valdivia, Chile.

### PROFESSIONAL

2018 - actual. Technical Referee. National Commission for the Scientific and Technology Research of Chile (CONICYT), Santiago, Chile.

2013 - 2017. Doctoral Researcher, Grants: Conicyt Anillo ACT-1116, Fondecyt 1110220, and Fondecyt 1120938. Universidad Austral de Chile, Valdivia, Chile.

## GRANTS

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

2018 - 2020, FONDEF ID17AM0043. La fuente de la juventud: desarrollo de un suplemento antioxidante, antiinflamatorio y neuroregenerativo derivado del lúpulo para el rejuvenecimiento cerebral. **Postdoctoral Researcher.**

## PUBLICATIONS

Richter HG, Mendez N, **Halabi D**, Torres-Farfan C, Spichiger C. New integrative approaches to discovery of pathophysiological mechanisms triggered by night shift work. Chronobiol Int. 2021 Nov 2;1-16. 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*. 2020 Aug 8;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.

## PARTICIPATION IN NATIONAL & INTERNATIONAL CONGRESSES AND/OR SYMPOSIA (LAST 5 YEARS)

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, Vergara K, Spichiger C, Salazar E, Richter HG, Kähne T, Torres-Farfan C. 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, Vergara K, Spichiger C, Salazar E, Richter HG, Kähne T, Torres-Farfan C. Gestational Circadian Disruption by Light, Makes Vulnerable to Disease Development. XV Latin American Symposium on Chronobiology (LASC), Colonia Del Sacramento, Uruguay, October, 2019.

Rivera FJ, Silva ME, Lange S, Hinrichsen B, Philp A, Reyes CR, **Halabi D**, Mansilla J, Rotheneichner P, Guzman de la Fuente A, Couillard-Despres S, Bätz LF, Franklin RJM, Aigner L. Soluble Factors Derived from Brain Pericytes Promote Neural Stem Cells to Generate Oligodendrocytes. XIV European Meeting on Glial Cells in Health and Disease (GLIA 2019). Porto, Portugal, July, 2019.

**Halabi D**, Salazar E, Mendez N, Spichiger C, Vergara K, Ehrenfeld P, Kahne T\*, Richter HG, Torres-Farfan C. Gestational chronodisruption induces metabolic syndrome phenotype in the rat offspring. XXXIII Reunión Anual de la Sociedad Chilena de Ciencias Fisiológicas - International Society for Heart Research, Reserva Biológica Huilo-Huilo, Chile, August, 2018.

Torres-Farfan C, Corvalan F, **Halabi D**, Salazar E, Mendez N, Vergara K, Ehrenfeld P, Richter HG. Maternal melatonin treatment prevents deleterious effects of gestational chronodisruption in rat offspring. XXXIII Reunión Anual de la Sociedad Chilena de Ciencias Fisiológicas - International Society for Heart Research, Reserva Biológica Huilo-Huilo, Chile, August, 2018.

**Halabi D**, Vergara K, Mendez N, Spichiger C, Richter HG, Seron-Ferre M, Torres-Farfan C. Gestational chronodisruption programs metabolic syndrome in the rat offspring. XIV Latin American Symposium on Chronobiology (LASC), Valparaiso, Chile, November, 2017.

Mendez N, Vergara K, Spichiger C, **Halabi D**, Vio CP, Richter HG, Torres-Farfan C. Fetal programming of blood pressure by maternal circadian disruption. American Society of Nephrology, Kidney Week, Chicago, November, 2016.

Mendez N, **Halabi D**, Spichiger C, Salazar E, Vergara K, Richter HG, Seron-Ferre M, Torres-Farfan C. Gestational chronodisruption impairs circadian physiology in the adult offspring, increasing

the risk of chronic disease. Seminario DOHaD Chile 2016, Pontificia Universidad Católica de Chile, Santiago, Chile, June 29-30, 2016

**Halabi D**, Vergara K, Mendez N, Spichiger C, Richter HG, Torres-Farfan C. Maternal chronodisruption during pregnancy alters glucose homeostasis and adipose tissue physiology in the offspring. European Biological Rhythms Society (EBRS)/World Congress of Chronobiology (WCC), Manchester, United Kingdom, August, 2015.

Spichiger C, Salazar ER, Mendez N, **Halabi D**, Vergara K, Alonso-Vazquez P, Seron-Ferre M, Richter HG, Torres-Farfan C. Maternal exposure to chronic shift photoperiod impairs adrenal function in the adult offspring. European Biological Rhythms Society (EBRS)/World Congress of Chronobiology (WCC), Manchester, United Kingdom, August, 2015.

**Halabi D**, Vergara K, Mendez N, Spichiger C, Salazar E, Seron-Ferre M, Richter HG, Torres-Farfan C. Maternal chronodisruption throughout pregnancy impairs glucose homeostasis and adipose tissue physiology in the offspring. 2015 Chronobiology Gordon Research Conference, Girona, Spain, June-July, 2015.

Salazar E, Azpeleta C, Spichiger C, Mendez N, Vergara K, **Halabi D**, Richter HG, Torres-Farfan C. Effects on plasma circadian rhythms and global methylation status in adult offspring gestated under chronodisruption. 2015 Chronobiology Gordon Research Conference, Girona, Spain, June-July, 2015.

Méndez N, **Halabi D**, Vergara K, Richter HG, Torres-Farfan C. Preliminary assessment of blood pressure changes in the adult offspring from gestational chronodisruption in the rat. XXV Congreso Sociedad Chilena de Endocrinología y Diabetes (SOCHED), Punta Arenas, Chile, November 2014.

Spichiger C, Méndez N, **Halabi D**, Vera H, Vergara K, Alonso-Vazquez P, Richter HG, Seron-Ferre M, Torres-Farfan C. Reprogramming of the rat adrenal circadian clock by gestational chronodisruption. XXV Congreso Sociedad Chilena de Endocrinología y Diabetes (SOCHED), Punta Arenas, Chile, November 2014.

Torres-Farfan C, Vergara K, Méndez N, **Halabi D**, Spichiger C, Alonso-Vazquez P, Carmona P, Vera H, Seron-Ferre, Richter HG. Gestational chronodisruption increases the risk of adult chronic disease in the rat. XXV Congreso Sociedad Chilena de Endocrinología y Diabetes (SOCHED), Punta Arenas, Chile, November 2014.

**Halabi D**, Méndez N, Vergara K, Spichiger C, Alonso-Vazquez P, Richter HG, Torres-Farfan C. Impact of gestational chronodisruption on maternal circadian rhythms and fetal growth. Second Artificial Light at Night (ALAN) Conference, Leicester, United Kingdom, September, 2014.

Méndez N, **Halabi D**, Vergara K, Torres-Farfan C, Richter HG. Preliminary assessment of adult blood pressure changes secondary to gestational chronodisruption. Second Artificial Light at Night (ALAN) Conference, Leicester, United Kingdom, September, 2014.

Spichiger C, Méndez N, **Halabi D**, Vera H, Vergara K, Alonso-Vazquez P, Richter HG, Seron-Ferre M, Torres-Farfan C. Reprogramming of adrenal circadian clock outputs by gestational chronodisruption. Second Artificial Light at Night (ALAN) Conference, Leicester, United Kingdom, September, 2014.

Vergara K, Méndez N, **Halabi D**, Spichiger C, Alonso-Vazquez P, Carmona P, Vera H, Richter HG, Torres-Farfan C. Gestational chronodisruption link to increased risk of adult chronic disease. Second Artificial Light at Night (ALAN) Conference, Leicester, United Kingdom, September, 2014.

## KEY SPEAKER

Cronodisrupción y las consecuencias futuras en el feto. VIII Curso para Especialistas “El futuro del sueño” y I Curso para Atención primaria. Sociedad Chilena de Medicina del Sueño SOCHIMES, Santiago, Chile, September 2021.

Los relojes biológicos en Odontología: un nuevo factor en el engranaje de la salud. XXXII International Asociation of Dental Research IADR, Santiago, Chile, June, 2020.

Bioestadística y Manejo de Datos para los Estudiantes del Programa de Honor en Investigación. Universidad Austral de Chile, Valdivia, Chile, July 2018

De relojes y energía, efecto de la cronodisrupción durante la gestación en el metabolismo de su descendencia – Implicancias para la Odontología. IADR Young Researchers Symposium, Santiago, Chile, July, 2018

## TRAINING AND TUTORSHIP/CO-TUTORSHIP OF STUDENTS

Cristina Sepúlveda. “Pérdida económica por inasistencia de usuarios agendados en Centro Comunitario de Salud Familiar Collico, Valdivia”. **Tutor** (Master of Business Administration). Faculty of Economics, Universidad Austral de Chile. 2021.

Karla Martínez. “Origen fetal de la inflamación grónica de bajo grado en la obesidad efecto de la cronodisrupción gestacional”. **Tutor** (Bachelor of Science Thesis). Faculty of Science, Universidad Austral de Chile. 2021.

Katiushka Sanhueza. “Programación fetal de enfermedades no transmisibles y su relación con la cronodisrupción gestacional: una revisión de los mecanismos epigenéticos asociados y evidencia de reprogramación con melatonina”. **Tutor** (Bachelor of Science Thesis). Faculty of Science, Universidad Austral de Chile. 2021.

Constanza Bustos & Constanza Cristi. “Relación entre urea y mecanismos moleculares de salivación. Estudio in-vivo”. **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2019.

Fernanda Cortéz & Fernanda Pérez. “Nivel de conocimiento y actitud de basquetbolistas profesionales frente al trauma dentoalveolar y uso de protector bucal, en el sur de Chile, 2018”. **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2018.

Andy Antipichún. “Oscilación del flujo y pH salival en trabajadores con turnos nocturnos”. **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2018.

Mariana Quilodrán. “Correlación entre estado de salud periodontal y desempeño cognitivo: un estudio transversal”. **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2018.

Andrea Azócar & Francisca Subiabre. “Efectos de los turnos rotativos en flujo y pH salival en enfermeros(as)”. **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2017.

Cristina Sepúlveda & Luis Jara. “Creación y validación de un instrumento de medición para evaluar conocimiento, actitudes y acceso a la evidencia sobre anestésicos locales en Cirujano Dentistas”. **Tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2017.

Fernando Santana & Diego Lavandero. "Validación de un cuestionario para la evaluación de actitudes, conocimiento y barreras en la investigación en estudiantes universitarios del área de la salud de Chile ". **Tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2016.

Bárbara Sanchez. "Supervivencia de implantes dentales cortos en desdentados totales: Revisión sistemática". **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2014.

Israel Ponce. "Caracterización del paciente atendido en Clínica de Periodoncia de una población universitaria Chilena entre los años 2008 y 2013". **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2014.

Joselyne Lerchundy. "Observación de los niveles de inserción según el biotipo gingival en pacientes sometidos a cirugía de alargamiento coronario y su evolución a los 3 meses". **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2014.

Stellamary Hernández & Mariana Wauters. "Higiene bucal, estado y necesidad de tratamiento periodontal en escolares de 12 años, Castro Chile 2014". **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2014.

Cyntia Alvarado & Nicolette Martinez. "Chlorhexidine for prevention of alveolar osteitis: randomised clinical trial". **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2013.

Lagos Paola & Rodríguez José. "Adherencia a la práctica basada en la evidencia por odontólogos chilenos". **Tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2012.

Natalie Guzmán & Bárbara Mac-Lean. "Tendencias y caracterización de traumatismos dentoalveolares en niños y adolescentes entre 1-15 años, atendidos en el hospital de Valdivia, Chile, 2007-2011". **Co-tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2012.

Nicolás Arancibia. "Calidad metodológica de ensayos clínicos en publicaciones de Cirugía Maxilofacial en ISI". **Tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2012.

Valentina Pedreros & Valeria Beroiza. "Relación de los niveles de alfa amilasa salival con el estrés percibido, flujo salival y pulso en estudiantes de odontología". **Tutor** (Dentistry Thesis). School of Dentistry, Universidad Austral de Chile. 2012.

## **REVIEWER AND PANEL BOARD**

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

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

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

## **COMMITTEE AND ADMINISTRATIVE SERVICE**

2020 - actual: Director of Honor Medical Research Program (Programa Honor de Investigación en Medicina; Resol. 019/2020), Faculty of Medicine, Universidad Austral de Chile.

2019 - 2020: Chairman of Department (Resol. 257/2019), Institute of Dentistry, Universidad Austral de Chile.

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

## **AWARDS**

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

2016: Completion of Doctoral Thesis Scholarship (Beca de Finalización de Tesis Doctoral). Dirección de Estudios de Postgrado, Universidad Austral de Chile (resol 118/2016). Valdivia, Chile.

2012 - 2016: Graduates School Scholarship (Beca Escuela de Graduados). Facultad de Medicina, Universidad Austral de Chile. Valdivia, Chile.

## **SKILLS**

### *RESEARCH*

- Advanced data analysis and modeling methods
- Epidemiological and clinical research
- Physiology methods
- Surgery (human and rodents)
- Cell culture

### *HACKING SKILLS*

- Statistical language: R+ (tidyverse), Python, SQL
- Statistical Software: RStudio, GraphPad, G\*Power, SPSS
- Communication: L<sup>A</sup>T<sub>E</sub>X, RMarkdown, HTML
- Operative Systems: Arch Linux, MacOS, Windows

## **REFERENCES**

Dr. Claudia Torres-Farfán, Full Professor. Universidad Austral de Chile. Phone: (56)-63-2293021. Mail: [claudia.torres@uach.cl](mailto:claudia.torres@uach.cl)

Dr. Hans G Richter, Chancellor. Universidad Austral de Chile. Phone: (56)-63-2221335. Mail: [hrichter@uach.cl](mailto:hrichter@uach.cl)