

## **ALBERTO AVOLIO**

Professor Emeritus  
Macquarie Medical School,  
Faculty of Medicine, Health and Human Sciences,  
Macquarie University  
Sydney, 2109  
Australia

### **ACADEMIC QUALIFICATIONS**

- 1972 BE, Electrical Engineering, The University of New South Wales (*UNSW*).
- 1977 PhD, *UNSW*.: "*Haemodynamic studies and modelling of the mammalian arterial system*".
- 2011 FIAMBE (Fellow, International Academy of Medical and Biological Engineering)
- 2020 FIEEE (Fellow, Institute of Electrical and Electronic Engineers)

### **Professorial Academic Appointments**

- 2006 - 2007 Professor, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia  
Associate Dean, Research Training, Faculty of Engineering, University of New South Wales, Sydney, Australia
- 2007 - 2019 Professor of Biomedical Engineering, Department of Biomedical Sciences, Faculty of Medicine, Health and Human Sciences (formerly Australian School of Advanced Medicine), Macquarie University.
- 2020 - now Professor Emeritus, Macquarie Medical School, Faculty of Medicine, Health and Human Sciences, Macquarie University

### **AWARDS**

- 1977 RT Hall Prize in Cardiology, Cardiac Society of Australia and New Zealand
- 1993 Sandoz Prize for Gerontology Research, International Association of Gerontology
- 2021 Lifetime Achievement Award, *Pulse of Asia Society*
- 2022 Lifetime Achievement Award, *Society for Artery Research*

### **VISITING PROFESSORIAL APPOINTMENTS AT EXTERNAL UNIVERSITIES AND ACADEMIC INSTITUTIONS**

- 2006 Visiting Professor, Temasek Polytechnic (TP), Singapore (curriculum development for advanced academic standing of TP students at UNSW)
- 2007 Visiting Professor, Faculty of Science and Engineering, Favaloro University, Buenos Aires, Argentina (teaching of specialised courses in Arterial Haemodynamics)
- 2011 -2014 Visiting Researcher, Johns Hopkins University, USA (supervisor of PhD student enrolled at Macquarie University but located at Johns Hopkins University School of Medicine)
- 2011 - 2022 Visiting Professor and External Curriculum Assessor, University of Malaya, Kuala Lumpur, Malaysia (delivery of lectures and assessment of Biomedical Engineering Programs)
- 2012 - 2014 Visiting Professor, Tokyo Medical University, Tokyo, Japan (delivery of lectures on Cardiovascular Research Methodologies to medical students and postgraduate research students)
- 2014 - present Visiting Professor, Northeastern University, Sino-Dutch School for Biomedical and Information Engineering Shenyang, China (delivery of lectures to postgraduate research students on Arterial Haemodynamics and Cardiovascular Research)

2017 - 2020 Visiting Professor, Shanghai Jiaotong School of Medicine, Shanghai University, Ruijin Hospital North, Shanghai, China (delivery of lectures to hospital/university staff and conducting collaborative research)

#### **EDITORSHIP AND EDITORIAL BOARDS OF INTERNATIONAL SCIENTIFIC JOURNALS**

2001 - 2020 Editorial Board, *Journal of Hypertension* (International Society of Hypertension (Lippincott Williams and Wilkens))  
2001 - present Editorial Board, *Hypertension* (American Heart Association).  
2007 - 2018 Editorial Board, *Journal of American Society of Hypertension* (Elsevier)  
2009 - present Associate Editor, *Pulse* (Karger, Basel)  
2009 - 2018 Asian Pacific Editor, *Artery Research* (Elsevier)  
2013 - present Editorial Board, *Hypertension Research* (Springer Nature)  
2014 - present Editorial Board, *Current Hypertension Reviews* (Bentham Science)  
2016 - present Associate Editor, *Medical and Biological Engineering and Computing* (Springer)  
2017 - 2021 Editorial Board, "Vascular Medicine", *Journal of Clinical Medicine* (MDPI)  
2018 - present Editorial Board, *American Journal of Hypertension* (Oxford University Press)  
2019 - present Deputy Editor, *Artery Research* (Atlantis Press)  
2019 - 2021 Guest Editor, *Hypertension Journal* (Incessant Nature Science Pub.)  
2023 - present International Associate Editor (*Hypertension Research*)

#### **PROFESSIONAL SOCIETIES (Activities/membership)**

- **European Society/international Society of Hypertension (ESH, ISH)** (Editorial and review activities for ESH and ISH official publication: *Journal of Hypertension*)
- **American Heart Association (AHA)** Editorial Board, *Hypertension* (Journal of AHA) Writing Committee on AHA Official Statement on "Arterial Stiffness".
- **Pulse of Asia Society** Executive committee; Associate Editor, *Pulse*, *Journal of Pulse of Asia Society*; Vice President; President, *Pulse of Asia Society*,
- **Artery Society for Research in Arterial Function and Physiology** Member, *Artery Society*; Asian Pacific Editor, *Artery Research* (Elsevier), *Journal of Artery Society*; Deputy Editor, *Artery Research* (Atlantis Press), *Journal of Artery Society*
- **High Blood Pressure Research Council of Australia (HBPRCA)**, Member, HBPRCA
- **International Academy of Medical and Biological Engineering (IAMBE)**. Fellow, International Academy of Medical and Biological Engineering (FIAMBE) The Academy is affiliated with the International Federation for Medical and Biological Engineering.
- **Institution of Electrical and Electronic Engineering (IEEE)**, Senior Member IEEE, IEEE Cardiopulmonary Systems Technical Committee for specialty track for scientific; meeting of IEEE Engineering in Medicine and Biology Society (EMBS); EMBC2017-IEEE Standards Workshop Committee on Cuffless Measurement of Blood Pressure; IEEE Fellow

**PATENTS:** United States Patent: 7,981,103 (July 19, 2011). "Method of treating a stiffened blood vessel" (M. O'Rourke, W. Walsh, J. Iliopoulos, **A. Avolio**, R. Gillies, P. Walsh).

#### **INTERNATIONAL COLLABORATION**

##### **USA**

- 1981 – 2015 *Prof. Wilmer Nichols*, Department of Cardiovascular Med, University of Florida, Gainesville, FL, USA.
- 1987 – 1994 *Dr Renu Virmani*, Cardiovascular Pathology, Walter Reed National Military Medical Centre, Maryland, USA.
- 1988 - 2018 *Dr Dean Winter*, Southwest Research Institute, San Antonio, Texas; later AtCor Medical
- 2000 – 2018 *Prof. Edward Lakatta* National Institute on Aging , (NIH); Johns Hopkins University, Baltimore, MD USA.
- 2010 – 2017 *Prof Dan Berkowitz, A/Prof. Lakshmi Santhanam*, Anaesthesiology, Johns Hopkins University, Baltimore, USA
- 2011 – 2015 *Prof. Subroto Chatterjee*, Johns Hopkins University, Baltimore, USA.
- 2014 - present *Bart Spronck*, Yale University, New Haven, USA.
- 2015 – 2019 *Prof. Bruce Johnson*, Mayo Clinic, Rochester MN, USA.

#### **CHINA**

- 1981 – 1985 *Dr Shangong Chen* (Cardiovascular Institute, Fu Wai Hospital, Beijing, 1981: *Dr Zheng Dong Huang, Zheng Xiang Luo*, Guangdong Cardiovascular Institute and Provincial Hospital, Guangzhou, 1983).
- 1988 – 1992 *Drs SY Guo, TH Liu, DY Ou*. Pathology Institute, Shanghai, China.
- 2012 – 2019 *Prof Jiguang Wang, Prof Yan Li*, Shanghai Jiaotong University School of Medicine, Ruijin Hospital.
- 2014 – present *Prof. Lishen Xu*, Northeastern University, Sino-Dutch School for Biomedical and Information Engineering Shenyang, China
- 2016 – present *Prof. Hanguang Xiao*, Chongqing University of Technology, Chongqing, China
- 2017 – present *Dr Junli Zuo*, Ruijin Hospital North, Shanghai Jiaotong University School of Medicine, Shanghai, China.

#### **JAPAN**

- 1982 – 1987 *Prof Toshio Yaginuma*, Jichi Medical School, Tokyo, Japan.
- 1992 – 2016 *Prof Kenji Takazawa*, Jichi Medical School and Tokyo Medical College, Tokyo, Japan.
- 2014 – 2020 *Prof. Hirofume Tomyama*. Tokyo Medical College, Tokyo Japan.

#### **FRANCE**

- 1984 – 2020 *Prof. Bernard Levy*, Lariboisiere Hospital, Paris, France.
- 1992 – now *Prof Michel Safar*. Broussias Hospital, later Hotel Dieu Hospital, Paris, France
- 1998 – 2019 *Prof Stephane Laurent, Prof Pierre Boutouyrie*, INSERM U970. European Hospital, Paris, France
- 2006 – 2017 *Prof Athanase Benetos*, Université de Lorraine, Nancy, France
- 2011 – 2012 *Dr Antoine Cremer*, Cardiology/Arterial Hypertens Unit, Hôpital Saint André, University Hospital, Bordeaux, France
- 2014 – 2019 *Prof Patrick Lacoley*, Université de Lorraine, Nancy, France

#### **UK**

- 2001 – present *Prof John Cockcroft*, Wales Heart Research Institute, Cardiff UK, *Prof Ian Wilkinson*, University of Cambridge, UK, *Dr Carmel McEniery*, University of Cambridge, UK
- 2010 – 2018 *Prof. Marek Czosnyka*, Department of Clin Neurosciences, Addenbrooke's Hospital, University of Cambridge, UK.

#### **ITALY**

- 2012 – 2021 *Prof. Giuseppe Schillaci (deceased, 2018), Dr. Giacomo Pucci*; University of Perugia, Italy.
- 2017 – now *Dr Paolo Salvi; Prof Gianfranco Parati*, Istituto Auxologico Italiano, IRCCS, Milano, University of Milano-Bicocca,.

2017 – 2022 *Dr Marco Di Rienzo*, Fondazione Don Gnocchi, Milano, Italy.

#### **MALAYSIA**

2012 – 2019 *Dr. Kalaivani Chellappan*, University Kebangsaan Malaysia, Bangi, Kuala Lumpur.

2013 – 2018 *Dr. Einly Lim and Dr SC Ng*, Department of Biomedical Engineering, University of Malaya, Kuala Lumpur.

#### **KOREA**

2009 – Present *Prof Jeong Bae Park*, Yonsei University Wonju College of Medicine JB Lab, Seoul

2013 – 2022 *A/Prof Eun-Hwa Sohn*, Kangwon National University, Kangwon.

2018 – 2022 *Dr Kichul Sung*, Samsung Medical Centre, Seoul.

#### **IRAN**

1995 – 2019 *Prof. Hamid Tafazzoli Shadpour*. Faculty of Biomedical Engineering, Amirkabir University of Technology, Teheran

#### **INDUSTRY ENGAGEMENT**

1994 - present CardieX (AtCor Medical), Sydney

2001 - 2006 Advanced Anaesthesia Specialists, Sydney.

2008 - 2013 GE Health, Sydney.

2011 - 2015 CVRx Inc, Minneapolis, USA.

2016 - 2017 Sunshine Heart Inc. Mineapolis, USA.

2016 - 2018 Kaoskey Pty Ltd. Sydney.

2016 – 2019 Cellmid Ltd, Sydney.

2015 - 2022 BPLab, Nizhny Novgorod, Russia

2016 - present Quipu SRL. Pisa, Italy..

2017 - 2018 Healthrian, Daejeon, Korea.

2017 - 2019 Healthstats International, Singapore.

2018 - 2019 Maisense, Taiwan.

2018 - 2022 Blumio Inc. California USA

2019 - 2019 Fujitsu Australia Ltd, Sydney.

2019 - 2021 Brain Protection Company, Sydney.

#### **REVIEWER OF SCIENTIFIC JOURNALS**

**Total Journals ( ~ 50 ) ; Total Reviews ( ~ 1280 ) ; 80% of reviews done for the following Journals**

- Journal of Hypertension
- Hypertension
- Artery Research
- Physiological Measurement
- IEEE Transactions in Biomedical Engineering
- American Journal of Physiology
- Atherosclerosis, Thrombosis and vascular Biology
- Journal of American Society of Hypertension
- Medical and Biological Engineering and Computing
- Journal of Human Hypertension
- Hypertension Research
- IEEE Journal of Biomedical and Health Informatics
- American Journal of Hypertension
- Journal of Engineering in Medicine
- Biomedical Engineering Online
- Annals of Biomedical Engineering

- Pulse
- Circulation
- Medicine
- American Journal of Cardiology
- European Journal of Applied Physiology
- Journal of American Heart Association
- Computer Methods in Biomechanics and Biomedical Engineering

#### **INVITED LECTURES (since 2008)**

National: N = 12 ; International: N = 56

#### **HIGHER DEGREE STUDENT SUPERVISION**

PhD: N = 48; Masters: N = 6

#### **EXAMINATION OF HIGHER DEGREE THESES**

PhD: N = 63; Masters: N = 1

#### **RESEARCH GRANTS**

Total Funding \$9,007,295 (AUD)

##### **Major funding Agencies**

- Australian Research Council (ARC)
- National Health and Medical Research Council
- National Institutes of Health (NIH – USA)
- Heart Foundation (AUS)
- Macquarie University
- National Natural Science Foundation of China

#### **RESEARCH PUBLICATIONS**

**Total Research Output** (n = 350 [not including conference presentation])

- |                                   |      |
|-----------------------------------|------|
| • Books                           | 1    |
| • Book Chapters                   | 17   |
| • Peer-Reviewed Journal papers    | 238  |
| • Editorials in Refereed Journals | 28   |
| • Letters in Refereed Journals    | 14   |
| • Refereed Conference Papers      | 52   |
| • [Conference Presentations       | 460] |

**Citations** (Google Scholar [14/03/2023])

	<b>All</b>	<b>Since 2018</b>
• Citations	21,125	7,584
• h-index	64	44
• i10-index	202	142

**PUBLICATION URL** : <https://scholar.google.com/citations?user=llRPPpoAAAAJ&hl=en>

Date: 3 March 2023

## Publications in last 5 Years (since 2018)

### 2018

1. Zuo JL, Chu SL, Tan I, Butlin M, Zhao JH, Avolio A. Association of hemodynamic indices of central and peripheral pressure and subclinical target organ damage. *Pulse (Basel)*. 2018;5(1-4):133-143.
2. Tan I, Butlin M, Spronck B, Xiao, Avolio A. Effect of Heart Rate on Arterial Stiffness as Assessed by Pulse Wave Velocity. *Current Hypertension Reviews* 2018;14(2):107-122.
3. Avolio AP, Tan I, Butlin M, Barin E. Electrical activity of the heart under pressure. *Am J Hypertens* 2018;31 (2) 166-168
4. Spronck B, Delhaas T, Butlin M, Reesink KD, Avolio AP. Options for Dealing with Pressure Dependence of Pulse Wave Velocity as a Measure of Arterial Stiffness: An Update of Cardio-Ankle Vascular Index (CAVI) and CAVI<sub>o</sub>. *Pulse* 2018 Mar;5(1-4):106-114
5. Xiao HG, Tan I, Butlin M, Li D, Avolio A. Mechanism underlying heart rate dependency of wave reflection in the aorta: a numerical simulation. *Am J Physiol* 2018;314(3):H443-H451
6. Behnia M, Avolio A, Johnson B. Influence of dietary nitrate supplementation on lung function and exercise gas exchange in COPD patients. *Nitric Oxide* 2018; 75:12-22.
7. Lacolley P, Regnault V, Avolio AP. Smooth muscle cell and arterial aging: basic and clinical aspects. *Cardiovascular Research* 2018;114(4):513-528
8. Spronck B, Avolio AP, Tan I, Butlin M, Reesink KD, Delhaas T. Reply: Medical science is based on facts and evidence. *J Hypertens* 2018;36(4):960-962
9. Tan I, Butlin M, Avolio A. Does increase in arterial stiffness and wave reflection precede development of placental mediated complications in pregnancy? *J Hypertens*. 2018 ;36(5):1029-1031.
10. Gangoda SVS, Avadhanam B, Jufri NF, Sohn EH, Butlin M, Gupta V, Chung R, Avolio AP. Pulsatile stretch as a novel modulator of amyloid precursor protein processing and associated inflammatory markers in human cerebral endothelial cells. *Scientific Reports* 2018 Jan 26;8(1):1689. doi: 10.1038/s41598-018-20117-6.
11. Avolio A, Kim M, Gangoda S, Avadhanam A, Tan I, Butlin M, Adji A, O'Rourke M. Cerebral hemodynamics: effects of systemic arterial pulsatile function and hypertension. *Current Hypertension Reports* 2018 Mar 19;20(3):20. doi: 10.1007/s11906-018-0822-x
12. Xiao H, Butlin M, Qasem A, Tan I, Li D, Avolio AP. N-point moving average: a special generalized transfer function method for estimation of central aortic blood pressure. *IEEE Trans Biomed Eng*. 2018;65(6):1226-1234.
13. Avolio AP, Kuznetsova T, Heyndrickx GR, Kerkhof PLM, Li JK-J. Arterial Flow, Pulse Pressure and Pulse Wave Velocity in Men and Women at Various Ages. In Kerkhof PLM Sex-specific analysis of cardiovascular function. Springer Publishing Company, 2018 (*Adv Exp Med Biol*. 2018;1065:153-168)
14. Palatini P, Agabiti Rosei E, Avolio A, Bilo G, Casiglia E, Ghiadoni L, Giannattasio C, Grassi G, Jelakovich B, Julius S, Lurbe E, Mancia G, McEniery CM, O'Rourke MF, Parati G, Pauletto P, Pucci G, Redon J, Saladini F, Strazzullo P, Tsioufis C, Wilkinson IB, Zanchetti A. Isolated systolic hypertension in the young: a consensus document endorsed by the European Society of Hypertension. *J Hypertension* 2018 2018 Jun;36(6):1222-1236.

15. Butlin M, Shirbani F, Barin E, Tan I, Spronck B, Avolio AP. Cuffless estimation of blood pressure: importance of variability in blood pressure dependence of arterial stiffness across individuals and measurement sites. *IEEE Trans Biomed Eng.* 2018;65(11):2377-2383
16. Shirbani F, Barin E, Lee YC, Ng K, Parratt J, Douglas E, Butlin M, Avolio AP. Characterisation of cardiac autonomic function in multiple sclerosis based on spontaneous changes of heart rate and blood pressure *Multiple Sclerosis and Related Disorders* 2018;22:120-127
17. Avolio A, Zuo J, Tan I, Butlin M. Pathway for elimination of distance measurement in studies of pulse wave velocity. *Hypertension.* 2018;71:819-821
18. Sharman JE, Avolio A. Vascular biomarker measurement using wrist-worn tonometry technology. *J Hypertens* 2018;36(11):2138-2139.
19. Avolio A, Tan I, Butlin M. Ultrasound measurement of central pulse pressure from carotid diameter: two for the price of one. *J Hypertens.* 2018;36(12):2310-2311
20. Shirbani F, Blackmore C, Kazzi C, Tan I, Butlin M, Avolio AP. Sensitivity of Video-Based Pulse Arrival Time to Dynamic Blood Pressure Changes. *Conf Proc IEEE Eng Med Biol Soc.* 2018;2018:3639-3641
21. Lara-Hernandez JA, Kim MO, Avolio AP, Butlin M. Transfer Function Between Intracranial Pressure and Aortic Blood Pressure and Carotid Blood Flow. *Conf Proc IEEE Eng Med Biol Soc.* 2018;2018:3169-3172.
22. Kazzi C, Blackmore C, Shirbani F, Tan I, Butlin M, Avolio AP, Barin E. Effects of instructed meditation augmented by computer-rendered artificial virtual environment on heart rate variability. *Conf Proc IEEE Eng Med Biol Soc.* 2018;2018:2768-2771
23. Aminuddin A, Tan I, Butlin M, Avolio AP, Kiat H, Barin E, Megat Mohd Nordin NA, Chellappan K. Effect of increasing heart rate on finger photoplethysmography fitness index (PPGF) in subjects with implanted cardiac pacemakers. *PLoS One.* 2018 Nov 28;13(11): e0207301. doi: 10.1371/journal.pone.0207301
24. Salvi P, Grillo A, Tan I, Simon G, Salvi L, Gao L, Rovina M, Butlin M, Yang Y, Meneghin E, Meng L, Faini A, Barin E, Pini A, Carretta R, Yong H, Avolio AP, Parati G. Systolic time intervals assessed from analysis of carotid pressure waveform *Physiological Measurement* 2018 Aug 20;39(8):084002. doi: 10.1088/1361-6579/aad51b
25. Jurko T, Mestanik M, Jurko A Jr, Spronck B, Avolio A, Mestanikova A, Sekaninova N, Tonhajzerova I. Pediatric reference values for arterial stiffness parameters Cardio-Ankle Vascular Index (CAVI) and CAVIo *J Am Soc Hypertens.* 2018 Nov;12(11):e35-e43. doi: 10.1016/j.jash.2018.10.003. Epub 2018 Oct 22

## 2019

26. Rezvani-Sharif A, Tafazzoli-Shadpour M, Avolio A. Progressive changes of elastic moduli of arterial wall and atherosclerotic plaque components during plaque development in human coronary arteries. *Med Biol Eng Comput.* 2019 Mar;57(3):731-740
27. Rezvani-Sharif A, Tafazzoli-Shadpour M, Avolio A. Mechanical Characterization of the Lamellar Structure of Human Abdominal Aorta in the Development of Atherosclerosis: An Atomic Force Microscopy Study. *Cardiovasc Eng Technol.* 2019 Mar;10(1):181-192
28. Xuan Y, Wang W, Zhang H, Tan I, Butlin M, Avolio A, Zuo J. Osteoporosis is inversely associated with arterial stiffness in the elderly: An investigation using the Osteoporosis Self-assessment

- Tool for Asians index in an elderly Chinese cohort. *J Clin Hypertens* (Greenwich). 2019 Mar;21(3):405-411. doi:10.1111/jch.13493
29. Spronck B, Mestanik M, Tonhajzerova I, Jurko A, Tan I, Butlin M, Avolio AP. Easy conversion of cardio-ankle vascular index into CAVIO: influence of scale coefficients. *J Hypertens*. 2019 Sep;37(9):1913-1914
  30. Omboni S, Posokhov I, Parati G, Rogoza A, Kotovskaya Y, Arystan A, Avolio A, Barkan V, Bulanova N, Cardona Muñoz E, Grigoricheva E, Konradi A, Minyukhina I, Muiesan ML, Mulè G, Orlova I, Pereira T, Peixoto Maldonado JM, Statsenko ME, Tilea I, Waisman G; VASOTENS Registry Study Group. Ambulatory blood pressure and arterial stiffness web-based telemonitoring in patients at cardiovascular risk. First results of the VASOTENS (Vascular health Assessment Of The hypertensive patients) Registry. *J Clin Hypertens* (Greenwich). 2019 Aug;21(8):1155-1168.
  31. Yang H, Zhao J, Deng X, Tan I, Butlin M, Avolio A, Zuo J. Pulse wave velocity is decreased with obesity in an elderly Chinese population. *J Clin Hypertens* (Greenwich). 2019 Sep;21(9):1379-1385
  32. Wang Q, Chao H, Zheng S, Tan I, Butlin M, Avolio A, Zuo J. Impact of new hypertension guidelines on target organ damage screening in a Shanghai community-dwelling population. *J Clin Hypertens* (Greenwich). 2019 Oct;21(10):1450-1455.
  33. Butlin M, Tan I, Barin E, Avolio AP. Non-invasive Physiological Monitoring. In Boland J Ed Cardiac catheterisation and interventional cardiology: The essential guide. *CRC Press* May 2019; pp 638. ISBN 9781138481510
  34. Cai T, Meroni A, Dissanayake H, Phang M, Avolio A, Celermajer D, Butlin M, Skilton M, Qasem A. Validation of a cuff-based device for measuring carotid-femoral pulse wave velocity in children. *J Human Hypertension* 2020;34(4):311-318
  35. Salvi P, Scalise F, Rovina M, Moretti F, Salvi L, Grillo A, Gao L, Baldi C, Faini A, Furlanis G, Sorropago A, Millasseau SC, Sorropago G, Carretta R, Avolio AP, Parati G. Non-Invasive Estimation of Aortic Stiffness Through Different Approaches: Comparison with Intra-aortic Recordings. *Hypertension* 2019 Jul;74(1):117-129
  36. Avolio A, Shirbani F, Tan I, Butlin M. Cuffless blood pressure monitoring and the advent of a new era in medicine and society. J Sola, R. Delgado-Gonzalo (Eds) in *The Handbook of Cuffless Blood Pressure Monitoring*, Springer 2019. ISBN978-3-030-24700-3
  37. Zuo J, Qian K, He Y, Tan I, Butlin M, Avolio A, Chen P. Serum 25-hydroxy-vitamin D deficiency and insufficiency are associated with ankle-brachial index but not arterial stiffness in an elderly community-dwelling Chinese population. *Artery Research* 2019;25(3):113-119
  38. Lee SJ, Avolio A, Seo DC, Kim BS, Kang JH, Lee MY, Sung KC. Relationship Between Brachial-Ankle Pulse Wave Velocity and Incident Hypertension According to 2017 ACC/AHA High Blood Pressure Guidelines. *J Am Heart Assoc*. 2019 Aug 20;8(16):e013019. doi: 10.1161/JAHA.119.013019.
  39. Tomiyama H, Ohkuma T, Ninomiya T, Nakano H, Matsumoto C, Avolio A, Kohro T, Higashi Y, Maruhashi T, Takase B, Suzuki T, Ishizu T, Ueda S, Yamazaki T, Furumoto T, Kario K, Inoue T, Koba S, Takemoto Y, Hano T, Sata M, Ishibashi Y, Node K, Maemura K, Ohya Y, Furukawa T, Ito H, Chikamori T, Yamashina A. Brachial-Ankle Pulse Wave Velocity Versus Its Stiffness Index  $\beta$ -Transformed Value as Risk Marker for Cardiovascular Disease. *J Am Heart Assoc*. 2019 Dec 17;8(24):e013004. doi: 10.1161/JAHA.119.013004.
  40. Busch KJ, Kiat H, Avolio A, Butlin M, Davidson A. Obstructive Hydrocephalus Due to Unruptured Brain Arteriovenous Malformation: Demonstrating Transcranial Color Duplex



Confirmation of Cerebral Venous Hemodynamic Alterations and Color Duplex Ultrasound Confirmation of Shunt Patency. *Cureus*. 2019 Nov 18;11(11):e6181. doi: 10.7759/cureus.6181. Erratum in: *Cureus*. 2020 Jan 6;12(1):c26.

41. Rezaeian M, Butlin M, Golzan SM, Graham SL, Avolio AP. A novel method for retinal vessel segmentation and diameter measurement using high speed video. *Conf Proc IEEE Eng Med Biol Soc*. 2019 Jul;2019:2781-2784
42. Protogerou AD, Argyris AA, Mitchell GF, Avolio. Pulse pressure amplification, target organ damage and cardiovascular mortality (Chapter 11). In Struijker-Boudier H, Barbier M (eds). *The Paris Vascular School: 50 years pioneering research in vascular biology and medicine*. Paris, France 2019.

## 2020

43. Zuo J, Hu Y, Chang G, Chu SL, Tan I, Butlin M, Avolio A. Relationship between arterial stiffness and chronic kidney disease in patients with primary hypertension. *J Hum Hypertens*. 2020 Sep;34(8):577-585
44. Busch KJ, Kiat H, Avolio A, Butlin M, Davidson A. Obstructive Hydrocephalus Due to Unruptured Brain Arteriovenous Malformation: Demonstrating Transcranial Color Duplex Confirmation of Cerebral Venous Hemodynamic Alterations and Color Duplex Ultrasound Confirmation of Shunt Patency. *Cureus*. 2019 Nov 18;11(11):e6181. doi: 10.7759/cureus.6181. Erratum in: *Cureus*. 2020 Jan 6;12(1):c26.
45. Ho TY, Redmayne G, Tran A, Liu D, Butlin M, Avolio A, Boutcher S, Boutcher Y. The effect of interval sprinting exercise on arterial stiffness of postmenopausal women. *Scand J Med Sci Sports*. 2020 Feb;30(2):312-321
46. Zuo JL, Chang GL, Tan I, Butlin M, Chu SL, Avolio A. Central aortic pressure improves prediction of cardiovascular events compared to peripheral blood pressure in short term follow-up of a hypertensive cohort. *Clin Exp Hypertens* 2020, 42(1):16-23 (Epub 16 Dec 2018).
47. Tang B, Zhao J, Ma J, Tan I, Butlin M, Zuo J, Avolio A. Relationship between body mass index and arterial stiffness in a health assessment Chinese population. *Medicine (Baltimore)*. 2020 Jan;99(3):e18793. doi: 10.1097/MD.00000000000018793
48. Cockcroft J, Avolio A. Of Machines and Men: Intelligent Diagnosis and the Shape of Things to Come. *Curr Hypertens Rep*. 2020 Jan 14;22(1):9
49. Jang SA, Namkoong S, Lee SR, Lee JW, Park Y, So G, Kim SH, Kim MJ, Jang KH, Avolio AP, Gangoda SVS, Koo HJ, Kim MK, Kang SC, Sohn EH. Multi-tissue lipotoxicity caused by high-fat diet feeding is attenuated by the supplementation of Korean red ginseng in mice. *Molecular & Cellular Toxicology* 2020; 16:39–50
50. Kario K, Chirinos JA, Townsend RR, Weber MA, Scuteri A, Avolio A, Hoshida S, Kabutoya T, Tomiyama H, Node K, Ohishi M, Ito S, Kishi T, Rakugi H, Li Y, Chen CH, Park JB, Wang JG. Systemic hemodynamic atherothrombotic syndrome (SHATS) - Coupling vascular disease and blood pressure variability: Proposed concept from pulse of Asia. *Prog Cardiovasc Dis*. 2020; 63:22-32
51. Cai T, Meroni A, Dissanayake H, Phang M, Avolio A, Celermajer D, Butlin M, Skilton M, Qasem A. Validation of a cuff-based device for measuring carotid-femoral pulse wave velocity in children. *J Human Hypertension* 2020;34(4):311-318
52. Mynard JP, Goldsmith G, Springall G, Eastaugh L, Lane GK, Zannino D, Smolich JJ, Avolio A, Cheung MMH. Central aortic blood pressure estimation in children and adolescents: results of the KidCoreBP study. *J Hypertens*. 2020;38(5):821-828

53. Peebles KC, Tan I, Cook MTD, Theobald DA, Avolio AP, Butlin M. Interarm differences in brachial blood pressure and their effect on derivation of central aortic blood pressure. *Artery Research* 2020;26(2):89-96
54. Rezaeian M, Georgevsky D, Mojtaba Golzan SM, Graham S, Avolio A, Butlin M. Pressure dependency of retinal arterial pulse wave velocity in the rat. *Artery Research* 2020;26(1):27-33
55. Rezaeian M, Butlin M, Golzan SM, Avolio A, Graham S. The association between retinal and central pulse wave velocity in the elderly *Artery Research* 2020; 148-153
56. Tan I, Butlin M, Shirbani F, Cox J, Peebles K, Zuo JL, Avolio A, Central aortic blood pressure and pulse wave velocity as tools in the hemodynamic assessment of hypertension. *Hypertension Journal* 2020; 6(3):147-154.
57. Butlin M, Tan I, Cox J, Shirbani F, Peebles K, Zuo JL, Avolio A, Blood pressure measurement methodologies - present status and future prospects. *Hypertension Journal* 2020; 6(3): 109-116
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