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A Guarantee of Arterial Wellness: Critical Role of Oral Health

Part One: Are you and or your patients at risk for arterial disease?

This section will discuss the global impact of cardiovascular disease (CVD) and the issue of focusing so much attention on end-stage CVD.¹ Students will become familiar with many common non-CVD conditions which are strongly associated with increased heart attack and stroke risk.²³⁴⁵⁶ They will also learn many easily observed physical signs of

¹ Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

² Dregan, A., J. Charlton, P. Chowienczyk and M. C. Gulliford (2014). "Chronic Inflammatory Disorders and Risk of Type 2 Diabetes Mellitus, Coronary Heart Disease, and Stroke: A Population-Based Cohort Study." Circulation **130**(10): 837-844.

³ Arias-Santiago, S., J. Orgaz-Molina, L. Castellote-Caballero, M. A. Arrabal-Polo, S. Garcia-Rodriguez, R. Perandres-Lopez, J. C. Ruiz, R. Naranjo-Sintes, M. Zubiaur, J. Sancho and A. Buendia-Eisman (2012). "Atheroma plaque, metabolic syndrome and inflammation in patients with psoriasis." Eur J Dermatol **22**(3): 337-344.

⁴ Kales, S. N., E. S. Soteriades, C. A. Christophi and D. C. Christiani (2007). "Emergency Duties and Deaths from Heart Disease among Firefighters in the United States." New England Journal of Medicine **356**(12): 1207-1215.

⁵ Ji, J., B. Zoller, K. Sundquist and J. Sundquist (2012). "Increased risks of coronary heart disease and stroke among spousal caregivers of cancer patients." Circulation **125**(14): 1742-1747.

⁶ Mancia, G., M. Bombelli, G. Brambilla, R. Facchetti, R. Sega, E. Toso and G. Grassi (2013). "Long-Term Prognostic Value of White Coat Hypertension: An Insight From Diagnostic Use of Both Ambulatory and Home Blood Pressure Measurements." Hypertension.

increased CVD risk.⁷⁸ Knowledge about these conditions and physical signs will enhance recognition of patients needing further CVD assessment. Perhaps more importantly, many attendees will realize they may have some jeopardy for heart attack and stroke risk. This knowledge may prompt a thorough CVD assessment which may prove vital for the student's well-being. Significant healthcare savings from treating periodontal disease will also be discussed.⁹

Part Two: Basics of the Bale/Doneen Method- A Guarantee for Arterial Wellness.

This course will discuss the technology and knowledge that allows for a guarantee of arterial wellness.¹⁰ Students will appreciate the fact that the vast majority of CV events arise from arterial disease that is asymptomatic and non-

⁷ Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." *Am J Cardiol* **109**(9): 1283-1287.

⁸ Christoffersen, M., R. Frikke-Schmidt, P. Schnohr, G. B. Jensen, B. G. Nordestgaard and A. Tybjaerg-Hansen (2011). "Xanthelasmata, arcus corneae, and ischaemic vascular disease and death in general population: prospective cohort study." *Bmj* **343**: d5497.

⁹ Jeffcoat, M. K., R. L. Jeffcoat, P. A. Gladowski, J. B. Bramson and J. J. Blum (2014). "Impact of Periodontal Therapy on General Health: Evidence from Insurance Data for Five Systemic Conditions." *Am J Prev Med*.

¹⁰ Bale BF, Doneen AL (2014) A Guarantee of Arterial Wellness: New Era of Cardiovascular Medicine. *J Clin Exp Cardiol* 5:298. doi: 10.4172/2155-9880.1000298.

obstructing.¹¹ They will realize it is a thrombosis that obstructs the flow of blood.¹² Attendees will comprehend the value of assessing for subclinical atherosclerosis.¹³ Students will be able to articulate from a scientific standpoint that inflammation is the cause of arterial disease.¹⁴ Members of the audience will understand the basic elements of the Bale/Doneen Method. They will recognize this method can halt and stabilize arterial disease.¹⁵ ¹⁶ Attendees will be in a position to incorporate what they have learned into a program to enhance their arterial wellness, as well as their patients’.

Part Three: The Oral-Systemic Connection to Arterial Wellness.

¹¹ Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." *Circulation* **92**(3): 657-671.

¹² DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." *New England Journal of Medicine* **315**(7): 417-423.

¹³ Baber, U., et. al. (2015). Prevalence, Impact, and Predictive Value of Detecting Subclinical Coronary and Carotid Atherosclerosis in Asymptomatic Adults The BioImage Study. *J Am Coll Cardiol*, 65(11), 1065-1074.

¹⁴ IL6R Genetics Consortium and Emerging Risk Factors Collaboration, Dr Nadeem Sarwar, Dr Adam S Butterworth, et. al. *Lancet* 3/31/2012; 379: 1205–13

¹⁵ Feng, D., Esperat, M. C., Doneen, A. L., Bale, B., Song, H., & Green, A. E. (2015). Eight-year outcomes of a program for early prevention of cardiovascular events: a growth-curve analysis. *J Cardiovasc Nurs*, 30(4), 281-291.

¹⁶ Cheng, HG, Patel BS, Martin SS, Blaha MJ, Doneen A, Bale B, Jones SR. Effect of comprehensive cardiovascular disease risk management on longitudinal changes in carotid artery intima-media thickness in a community-based prevention clinic. *Archives of Medical Science* 2015. In Press.

Oral health will be discussed as a critical element in guaranteeing arterial wellness.¹⁷ Students will learn it is the particular pathogens involved in periodontal disease that generate the CV risk.¹⁸¹⁹²⁰ Due to this, the definition of periodontal disease must include the pathogen burden as well as the clinical signs. Attendees will recognize numerous mechanisms by which oral pathogens can generate arterial inflammation.²¹²²²³²⁴ The student will comprehend the importance of endodontic infection in triggering heart attacks.²⁵ Attendees will understand the sophisticated clinical tools available to objectively report pathogen burden and to more accurately identify endodontic disease.²⁶ Arias-Santiago, S., J. Orgaz-Molina, L. Castellote-Caballero, M. A. Arrabal-Polo, S. Garcia-Rodriguez, R. Perandres-Lopez, J. C. Ruiz, R. Naranjo-Sintes, M. Zubiaur, J. Sancho and A. Buendia-Eisman (2012). "Atheroma plaque, metabolic syndrome and inflammation in patients with psoriasis." *Eur J Dermatol* **22**(3): 337-344.

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¹⁷ Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." *J Am Coll Cardiol* **57**(8): 971-976.

¹⁸ Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." *Circulation* **111**: 576 - 582.

¹⁹ Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." *J Hypertens* **28**(7): 1413-1421.

²⁰ Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." *J Am Heart Assoc* **2**(6): e000254.

²¹ Mann, D. L. (2011). "The emerging role of innate immunity in the heart and vascular system: for whom the cell tolls." *Circ Res* **108**(9): 1133-1145.

²² Dietmann, A., et al. (2013). Effects of *Aggregatibacter actinomycetemcomitans* leukotoxin on endothelial cells. *Microb Pathog*, 61-62, 43-50.

²³ Mesa et al., Oral Pathogens, Immunity, and Periodontal Diseases; *Current Immunology Review*; 2011, 7: 83-91

²⁴ Fardini, Y., X. Wang, S. Temoin, S. Nithianantham, D. Lee, M. Shoham and Y. W. Han (2011). "Fusobacterium nucleatum adhesin FadA binds vascular endothelial cadherin and alters endothelial integrity." *Mol Microbiol* **82**(6): 1468-1480.

²⁵ Pessi, T., V. Karhunen, P. P. Karjalainen, A. Ylitalo, J. K. Airaksinen, M. Niemi, M. Pietila, K. Lounatmaa, T. Haapaniemi, T. Lehtimäki, R. Laaksonen, P. J. Karhunen and J. Mikkelsen (2013). "Bacterial Signatures in Thrombus Aspirates of Patients With Myocardial Infarction." *Circulation* **127**(11): 1219-1228.

²⁶ Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." *J Endod* **42**(3): 356-364.

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Christoffersen, M., R. Frikke-Schmidt, P. Schnohr, G. B. Jensen, B. G. Nordestgaard and A. Tybjaerg-Hansen (2011). "Xanthelasmata, arcus corneae, and ischaemic vascular disease and death in general population: prospective cohort study." Bmj **343**: d5497.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Dregan, A., J. Charlton, P. Chowienczyk and M. C. Gulliford (2014). "Chronic Inflammatory Disorders and Risk of Type 2 Diabetes Mellitus, Coronary Heart Disease, and Stroke: A Population-Based Cohort Study." Circulation **130**(10): 837-844.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." Am J Cardiol **109**(9): 1283-1287.

Christoffersen, M., R. Frikke-Schmidt, P. Schnohr, G. B. Jensen, B. G. Nordestgaard and A. Tybjaerg-Hansen (2011). "Xanthelasmata, arcus corneae, and ischaemic vascular disease and death in general population: prospective cohort study." Bmj **343**: d5497.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Dregan, A., J. Charlton, P. Chowienczyk and M. C. Gulliford (2014). "Chronic Inflammatory Disorders and Risk of Type 2 Diabetes Mellitus, Coronary Heart Disease, and Stroke: A Population-Based Cohort Study." Circulation **130**(10): 837-844.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." Am J Cardiol **109**(9): 1283-1287.

Arias-Santiago, S., J. Orgaz-Molina, L. Castellote-Caballero, M. A. Arrabal-Polo, S. Garcia-Rodriguez, R. Perandres-Lopez, J. C. Ruiz, R. Naranjo-Sintes, M. Zubiaur, J. Sancho and A. Buendia-Eisman (2012). "Atheroma plaque, metabolic syndrome and inflammation in patients with psoriasis." Eur J Dermatol **22**(3): 337-344.

Christoffersen, M., R. Frikke-Schmidt, P. Schnohr, G. B. Jensen, B. G. Nordestgaard and A. Tybjaerg-Hansen (2011). "Xanthelasmata, arcus corneae, and ischaemic vascular disease and death in general population: prospective cohort study." Bmj **343**: d5497.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Dregan, A., J. Charlton, P. Chowieńczyk and M. C. Gulliford (2014). "Chronic Inflammatory Disorders and Risk of Type 2 Diabetes Mellitus, Coronary Heart Disease, and Stroke: A Population-Based Cohort Study." Circulation **130**(10): 837-844.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and

Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." Am J Cardiol **109**(9): 1283-1287.

Christoffersen, M., R. Frikke-Schmidt, P. Schnohr, G. B. Jensen, B. G. Nordestgaard and A. Tybjaerg-Hansen (2011). "Xanthelasmata, arcus corneae, and ischaemic vascular disease and death in general population: prospective cohort study." Bmj **343**: d5497.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Dregan, A., J. Charlton, P. Chowienczyk and M. C. Gulliford (2014). "Chronic Inflammatory Disorders and Risk of Type 2 Diabetes Mellitus, Coronary Heart Disease, and Stroke: A Population-Based Cohort Study." Circulation **130**(10): 837-844.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." Am J Cardiol **109**(9): 1283-1287.

Christoffersen, M., R. Frikk-Schmidt, P. Schnohr, G. B. Jensen, B. G. Nordestgaard and A. Tybjaerg-Hansen (2011). "Xanthelasmata, arcus corneae, and ischaemic vascular disease and death in general population: prospective cohort study." Bmj **343**: d5497.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." Am J Cardiol **109**(9): 1283-1287.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-

fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." Am J Cardiol **109**(9): 1283-1287.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.

Shmilovich, H., V. Y. Cheng, R. Rajani, D. Dey, B. K. Tamarappoo, R. Nakazato, T. W. Smith, Y. Otaki, R. Nakanishi, H. Gransar, W. Paz, R. T. Pimentel, S. W. Hayes, J. D. Friedman, L. E. Thomson and D. S. Berman (2012). "Relation of diagonal ear lobe crease to the presence, extent, and severity of coronary artery disease determined by coronary computed tomography angiography." Am J Cardiol **109**(9): 1283-1287.

Desvarieux, M., R. Demmer, T. Rundek, B. Boden-Albala, D. Jacobs, R. Sacco and P. Papapanou (2005). "Periodontal microbiota and carotid intima-media thickness. The oral infections and vascular disease epidemiology study." Circulation **111**: 576 - 582.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, Jr., T. Rundek, B. Boden-Albala, R. L. Sacco and P. N. Papapanou (2010). "Periodontal bacteria and hypertension: the oral infections and vascular disease epidemiology study (INVEST)." J Hypertens **28**(7): 1413-1421.

Desvarieux, M., R. T. Demmer, D. R. Jacobs, P. N. Papapanou, R. L. Sacco and T. Rundek (2013). "Changes in clinical and microbiological periodontal profiles relate to progression of carotid intima-media thickness: the oral infections and vascular disease epidemiology study." J Am Heart Assoc **2**(6): e000254.

DeWood, M. A., W. F. Stifter, C. S. Simpson, J. Spores, G. S. Eugster, T. P. Judge and M. L. Hinnen (1986). "Coronary Arteriographic Findings Soon after Non-Q-Wave Myocardial Infarction." New England Journal of Medicine **315**(7): 417-423.

Falk, E., P. K. Shah and V. Fuster (1995). "Coronary Plaque Disruption." Circulation **92**(3): 657-671.

Fifer, K. M., S. Qadir, S. Subramanian, J. Vijayakumar, A. L. Figueroa, Q. A. Truong, U. Hoffmann, T. J. Brady and A. Tawakol (2011). "Positron emission tomography measurement of periodontal (18)f-fluorodeoxyglucose uptake is associated with histologically determined carotid plaque inflammation." J Am Coll Cardiol **57**(8): 971-976.

Leonardi Dutra, K., L. Haas, A. L. Porporatti, C. Flores-Mir, J. Nascimento Santos, L. A. Mezzomo, M. Correa and G. De Luca Canto (2016). "Diagnostic Accuracy of Cone-beam Computed Tomography and Conventional Radiography on Apical Periodontitis: A Systematic Review and Meta-analysis." J Endod **42**(3): 356-364.

Roth, G. A., M. H. Forouzanfar, A. E. Moran, R. Barber, G. Nguyen, V. L. Feigin, M. Naghavi, G. A. Mensah and C. J. L. Murray (2015). "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality." New England Journal of Medicine **372**(14): 1333-1341.