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RESEARCH ARTICLE

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The importance of activating the reform of direct and indirect respiratory function problems in the context of dental orthodontic treatment

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Abstract

In this paper and from the point of view of the need to move towards for the adoption of alternative and more attractive solutions in the context of dental orthodontic treatment adopts the beginning of four-dimensional diagnosis and treatment that takes into account the functions associated and in a way that restores them to what they were programmed to get the highest aesthetic and vital results and the most stable and stable, the problems of respiratory function were studied and discussed in the context of dental orthodontic treatment:

As for those who have the ability, it is recommended for them to return to the normal lifestyle in terms of respiratory function, in addition to various breathing exercises based on the above scoring on the purposes. And through the method of treatment in gas pressure chambers that tries to resemble a return to the normal lifestyle in terms of respiratory function, and thus helps patients who are difficult to return. This draws our attention here to the need to activate respiratory function reform with its auxiliary and indirect effects and especially by stimu-lating stem cells to promote healing towards more aesthetic and vital results.

Second: its indirect effects on the different structures of the teeth, jaws and face and their growth and diseases associated with that function, which reach them in terms of being part of the general physical condition that is affected by the effectiveness of the entire respiratory function, as in the case of hypoxia

This draws our attention here to the need to activate respiratory function reform with its auxiliary and indirect effects and especially by stimulating stem cells to promote healing towards more aesthetic and vital results.

And through the method of treatment in gas pressure chambers that tries to resemble a return to the normal lifestyle in terms of respiratory function, and thus helps patients who are difficult to return.

As for those who have the ability, it is recommended for them to return to the normal lifestyle in terms of respiratory function, in addition to various breathing exercises based on the above scoring on the purposes.

Keywords: Orthodontic treatment, Respiratory function, Teeth struc-ture, Gas pressure treatment

1 | INTRODUCTION:

In the context of dental orthodontic treatment:

Firstly: the greatest reliance on 2D and 3D diagnosis is often without an effective reliance on four-dimensional or functional motor (as a 3D body that can actually move within a function originally programmed)(1), so repairing functional and respiratory causes in the context of dental orthodontic treatment and based on a diagnostic reading less than four-dimensional dimensions will be inaccurate and incomplete.(2)(3).

On the other hand: often looks at the functional causes, including respiratory only with their direct and related effects adjacent to the teeth and jaws, and then overlooks their indirect effects on the different structures of the teeth, jaws and face, which reach them in terms of being part of the general physical condition that is affected by the effectiveness of the entire respiratory function, thus, for example, it overlooks the impact of oxygen on the various nervous, muscular and bone structures of the teeth, jaws and face, their growth and diseases associated with that function,(4)(5)(6)

and then does not properly pay attention to the surrounding environment in terms of its prepared effect for many diseases whose causes include, for example, hypoxia or ineffectiveness.(7-10)

First: A model of respiratory functional causes with their direct and related effects adjacent to the teeth and jaws:

According to the attached image, we find in the healthy condition: that the natural human breathes from his nose and mouth is closed and the tongue in its position in the dome of the palate and therefore the outcome of the internal and external forces affecting the teeth is even, which makes the teeth stable in their position within the so-called dental field accordingly

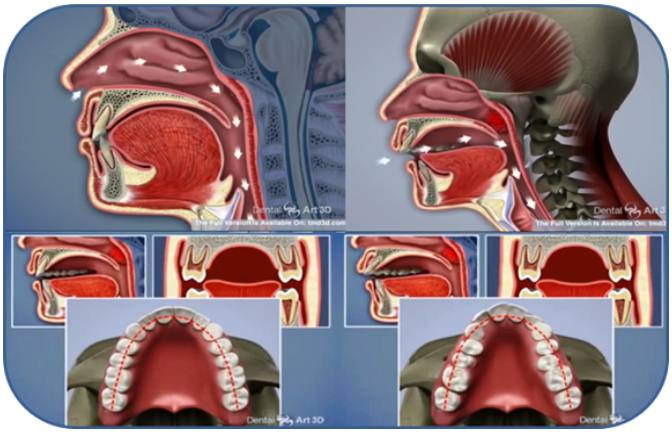

FIGURE 1: Respiratoryobstruction causes a dynamic imbalance in the dental field

But when this dynamic balance is disrupted, the teeth move under the influence of the forces applied to them until they reach a new state of balance.

For example, as in this case, when a disability appears in the nasal respiratory tract, this will lead to difficulty breathing, so a person will have to open his mouth in order to compensate for that narrowing of oral breathing. And here the tongue descends from its position from the dome of the palate, and the imbalance in that dynamic balance increases, which may result, for example, narrowing in the upper tooth arch with an overlay and protrusion of the teeth as a result of excessive pressure from the outcome of external forces.

And other results and on the two tooth arches, which requires reform by restoring the balance between the internal and external physiological forces affecting the teeth, which in this case will only be through the diagnosis of a four-dimensional functional starting from respiratory function and repair of its direct and related effects adjacent to the teeth, jaws and face in the context of dental orthodontic treatment towards more aesthetic, vital and stable results **(11)(12)(13)**

Second: A model of indirect respiratory func-tional causes on the different structures of the teeth, jaws and face, their growth and their dis-eases associated with that function:

Respiratory oxygen has the most important role in the subject of nutrition because the human suffocates and dies within minutes when his breathing is inter-rupted while he can live days and months without food .(14-17) and in the case of asphyxiation we find that the first to be affected is the brain because of its extreme sensitivity to the

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subject of oxygen(18)(19)(20),

and therefore the lack of oxygen in general will affect the nervous structures, muscles, bone and components of blood, because we find in the blood circulation that dark blood is Blood is almost one of the nutritional components needed for the body, but in that it contains a small amount of oxygen, it does not benefit the body until it oxygenates and turns circulation into bright red oxygenated blood.(21)

Which means that theoretically, when twins are given an equal amount of nutrition, the effectiveness will be in favor of those who have an increase in oxygen.

So maybe it's enough with a higher oxygen, which may open up a lot of room for obesity and other diseases.

FIGURE 2: Two dropsof blood, left with a red color, "oxygenated blood" (arterial) The right is dark red, non-oxygenatedblood."

And let's take an example in the dental field: bleeding gums, weakness, and beautiful pink color as a result of anemia when it's caused by general hypoxia.(22)(23)(24).

This draws our attention here to the need to activate respiratory function repair with the activity and vitality of those structures and the functions of the associated organs its auxiliary and indirect effects on the different structures of the teeth, jaws and face, especially in the context of functional orthodontic treatment towards more aesthetic and vital results and in our example here with gums by treating them and recovering them and returning to their beautiful and vital pink color Based on the above, we take the treatment method with the gas pressure chambers (oxygen) as a model. To study the activation of respiratory function repair :

This method is based on the idea of activating the oxygenation of the the body especially on brain in terms of containing the control centers of different organs and structures of the body, which if activated through several processing sessions, this will automatically reflect over time on

And in a way that must help her resist diseases and get rid of them by strengthening immunity from the above, and especially by stimulating stem cells to promote healing (25-28)

Which I find is like a real-time attempt to return respiratory function to the normal lifestyle that I originally programmed.(29-32)

FIGURE 3: Gaspressure treatment rooms

The essence of this method depends on the use of higher levels of oxygen gas more than in atmospheric pressure on the surface of the earth, where pure oxygen is given 100% under atmospheric pressure 2-2.5 which leads to the supply of large amounts of oxygen to the body cells where it dissolves in plasma under the influence of high pressure, and thus deliver it to all cells of the body, especially those that have been deprived of oxygen as a result of blockage of the blood vessels of the affected area or the presence of plasma under high pressure .

What I find is like trying to compensate forcibly and immediately for the process of blowing the normal lungs that the body is basically programmed to (which we have moved away from activating through the modern lifestyle where the polluted environment, weak movement and poor nutrition) (33-37)

to the level that inflates it to the point where it inflates and opens the pulmonary alveolis and in a way that leads to the expansion of the area of pulmonary tissue, which will absorb a greater amount of oxygen, which will benefit the body, especially through those centers of brain control.

FIGURE 4: The process of blowing the normal lungswhich the body is basically programmed to

Also on the other hand, I find him trying to put pressure on him:

And temporarily force organic to insert these gases into the lungs, regardless of the presence of disabilities in the entrances to the respiratory tract instead of straightening, treating and removing them.

And regardless of the repair and activation of the diaphragm function in the respiratory process .

On the other hand, I find it: ozone gas (O3) is used as a more effective substance than O2 and as an attempt to compensate immediately instead of activating the normal breathing process in the morning when something from the ozone layer descends to Earth.

2 | RESULT :

Gas pressure chambers treatment within its global standards is an effective type in treating some diseases that may be mainly related to respiratory problems directly and indirectly,(38-41)

but its idea and based on this research, is only a method that tries to resemble a return to the normal lifestyle in terms of respiratory function, and thus helps patients who are difficult to return,

Those who have the ability are advised to return to the normal lifestyle in terms of respiratory function, in addition to various breathing exercises based on the above scoring on the purposes, which can be dropped on activating the repair of respiratory functional causes in the context of orthodontic treatment as well.

3 | REFERENCES

1. Mahmoud Shishakli ,Naji Massoud ,Khaldoun Alshuraiki ,and Sinan Aljilali. important considerations should be evaluated for the decision to extract teeth that can be made in the context of orthodontic treatment.

2. Bowbeer GR. The four dimensions of orthodontic diagnosis–part 1. Funct Orthod. 2006 Winter-Spring;23(1):4-6, 8-10, 12-4 passim. PMID: 16776005.

3. Bowbeer GR. The four dimensions of orthodontic diagnosis–Part II. Funct Orthod. 2006 Summer-Fall;23(2):4-6, 8-10, 12-21. PMID: 17240935.

4. Bhutta BS, Alghoula F, Berim I. Hypoxia. 2021 Aug 7. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan–. PMID: 29493941.

5. Schumacker PT, Samsel RW. Analysis of oxygen delivery and uptake relationships in the Krogh tissue model. J Appl Physiol (1985). 1989 Sep;67(3):1234-44. doi: 10.1152/jappl.1989.67.3.1234. PMID: 2793716.

6. Grum CM. Tissue oxygenation in low flow states and during hypoxemia. Crit Care Med. 1993 Feb;21(2 Suppl):S44-9. doi: 10.1097/00003246-199302001-00009. PMID: 8428497.

7. Saleh S, Sambakunsi H, Mortimer K, Morton B, Kumwenda M, Rylance J, Chinouya M. Exploring smoke: an ethnographic study of air pollution in rural Malawi. BMJ Glob Health. 2021 Jun;6(6):e004970. doi: 10.1136/bmjgh-2021-004970. PMID: 34193474; PMCID: PMC8246283.

8. Dutta A, Khramtsova G, Brito K, Alexander D, Mueller A, Chinthala S, Adu D, Ibigbami T, Olamijulo J, Odetunde A, Adigun K, Pruitt L, Hurley I, Olopade O, Ojengbede O, Rana S, Olopade CO.

Household air pollution and chronic hypoxia in the placenta of pregnant Nigerian women: A randomized controlled ethanol Cookstove intervention. Sci Total Environ. 2018 Apr 1;619-620:212-220. doi: 10.1016/j.scitotenv.2017.11.091. Epub 2017 Nov 14. PMID: 29149745.

9. Quansah R, Semple S, Ochieng CA, Juvekar S, Armah FA, Luginaah I, Emina J. Effectiveness of interventions to reduce household air pollution and/or improve health in homes using solid fuel in low-and-middle income countries: A systematic review and meta-analysis. Environ Int. 2017 Jun;103:73-90. doi: 10.1016/j.envint.2017.03.010. Epub 2017 Mar 22. PMID: 28341576.

10. Pope D, Bruce N, Dherani M, Jagoe K, Rehfuess E. Real-life effectiveness of 'improved' stoves and clean fuels in reducing PM2.5 and CO: Systematic review and meta-analysis. Environ Int. 2017 Apr;101:7-18. doi: 10.1016/j.envint.2017.01.012. Epub 2017 Jan 28. PMID: 28285622.

11. Limme M. Conséquences orthodontiques de la respiration buccale [Orthodontic consequences of mouth-breathing]. Rev Belge Med Dent (1984). 1991;46(4):39-50. French. PMID: 1815296.

12. Page DC, Mahony D. The airway, breathing and orthodontics. Todays FDA. 2010 Mar-Apr;22(2):43-7. PMID: 20443530.

13. Damsté PH. De tong-functie in de reëducatie van spraakstoornissen, verkeerde ademgewoonten en slikmoeilijkheden [Tongue function in the rehabilitation of speech disorders, faulty breathing habits and deglutition disorders]. Acta Otorhinolaryngol Belg. 1980;34(6):630-45. Dutch. PMID: 7223413.

14. Magnoni, L.J., Eding, E., Leguen, I. et al. Hypoxia, but not an electrolyte-imbalanced diet, reduces feed intake, growth and oxygen consumption in rainbow trout (Oncorhynchus mykiss). Sci Rep 8, 4965 (2018). https://doi.org/10.1038/s41598-018-23352-z .

15. Thomas Kietzmann, Ville H. Mäkelä, The hypoxia response and nutritional peptides,

Peptides, Volume 138, 2021, 170507, ISSN 0196-9781.

16. Trayhurn P. Oxygen-A Critical, but Overlooked, Nutrient. Front Nutr. 2019;6:10. Published 2019 Feb 12. doi:10.3389/fnut.2019.00010.

17. Agnes Görlach, Elitsa Y. Dimova, Andreas Petry, Antonio Martínez-Ruiz, Pablo Hernansanz-Agustín, Anabela P. Rolo, Carlos M. Palmeira, Thomas Kietzmann,

Reactive oxygen species, nutrition, hypoxia and diseases: Problems solved? Redox Biology,

Volume 6, 2015, Pages 372-385,ISSN 2213-2317, https://doi.org/10.1016/j.

18. GALE, S., & HOPKINS, R. (2004). Effects of hypoxia on the brain: Neuroimaging and neuropsychological findings following carbon monoxide poisoning and obstructive sleep apnea. Journal of the International Neuropsychological Society, 10(1), 60-71. doi:10.1017/S1355617704101082.

19. Maria Erecińska, Ian A. Silver, Tissue oxygen tension and brain sensitivity to hypoxia,

Respiration Physiology,Volume 128, Issue 3, 2001, Pages 263-276, ISSN 0034-5687, ,https://doi.org/10.1016/S0034-5687(01)00306-1

20. Csaba Nyakas, Bauke Buwald, Paul G.M. Luiten, Hypoxia and brain development,

Progress in Neurobiology, Volume 49, Issue 1, 1996, Pages 1-51, ISSN 0301-0082,

https://doi.org/10.1016/0301-0082(96)00007-X.,

21. Stephen ID, Coetzee V, Law Smith M, Perrett DI (2009) Skin Blood Perfusion and Oxygenation Colour Affect Perceived Human Health. PLoS ONE 4(4): e5083. https://doi.org/10.1371/journal.pone.0005083.

22. Madiha Khalid, Mohammad Abdollahi. (2020) Role of lead in dental diseases. Journal of Environmental Science and Health, Part C 38:4, pages 329-361,

23. Antonela R. Terrizzi, Javier Fernandez-Solari, Ching M. Lee, Clarisa Bozzini, Patricia M. Mandalunis, Juan C. Elverdin, María Ines Conti, María Pilar Martínez,

Alveolar bone loss associated to periodontal disease in lead intoxicated rats under environmental hypoxia, Archives of Oral Biology, Volume 58, Issue 10, 2013, Pages 1407-1414, ISSN 0003-9969, https://doi.org/10.1016/j.archoralbio.2013.06.010.

24. Xian Xiao, Yan Li, Gang Zhang, Yuqi Gao, Yan Kong, Min Liu, Yinghui Tan,

Detection of bacterial diversity in rat's periodontitis model under imitational altitude hypoxia environment, Archives of Oral Biology, Volume 57, Issue 1, 2012, Pages 23-29, ISSN 0003-9969, https://doi.org/10.1016/j.archoralbio.2011.07.005.

25. Gardin, C.; Bosco, G.; Ferroni, L.; Quartesan, S.; Rizzato, A.; Tatullo, M.; Zavan, B. Hyperbaric Oxygen Therapy Improves the Osteogenic and Vasculogenic Properties of Mesenchymal Stem Cells in the Presence of Inflammation In Vitro. Int. J. Mol. Sci. 2020, 21, 1452. https://doi.org/10.3390/ijms21041452

26. Stephen R. Thom,1,2 Veena M. Bhopale,1 Omaida C. Velazquez,3 Lee J. Goldstein,3 Lynne H. Thom,1 and Donald G. Buerk4. Stem cell mobilization by hyperbaric oxygen

27. Cheng-Kui Geng, Hong-Hua Cao, Xiong Ying, Hua-Lin Yu, Effect of mesenchymal stem cells transplantation combining with hyperbaric oxygen therapy on rehabilitation of rat spinal cord injury, Asian Pacific Journal of Tropical Medicine, Volume 8, Issue 6, 2015, Pages 468-473, ISSN 1995-7645, https://doi.org/10.1016/j.apjtm.2015.05.001.

28. Mohamed Bekheit1,2, Nahed Baddour3, Khaled Katri2, Yousry Taher4, Khaled El Tobgy5, Essam Mousa2. Hyperbaric oxygen therapy stimulates colonic stem cells and induces mucosal healing in patients with refractory ulcerative colitis: a prospective case series

29. Anne E HollandCatherine J HillAlice Y JonesChristine F McDonaldAuthors' Breathing exercises for chronic obstructive pulmonary disease .declarations of interest. Version published: 17 October 2012 Version history https://doi.org/10.1002/14651858.CD008250.pub2

30. Sankar, J., Das, R.R. Asthma – A Disease of How We Breathe: Role of Breathing Exercises and Pranayam. Indian J Pediatr 85, 905–910 (2018). https://doi.org/10.1007/s12098-017-2519-6.

31. Yan Zou, Xin Zhao, Yun-Ying Hou, Ting Liu, Qing Wu, Yu-Hui Huang, Xiao-Hua Wang,

Meta-Analysis of Effects of Voluntary Slow Breathing Exercises for Control of Heart Rate and Blood Pressure in Patients With Cardiovascular Diseases, The American Journal of Cardiology, Volume 120, Issue 1, 2017, Pages 148-153, ISSN 0002-9149, https://doi.org/10.1016/j.amjcard.2017.03.247.

32. Aerobic and breathing exercises improve dyspnea, exercise capacity and quality of life in idiopathic pulmonary fibrosis patients: systematic review and meta-analysis.

33. Luzak A, Karrasch S, Thorand B, et al. Association of physical activity with lung function in lung-healthy German adults: results from the KORA FF4 study. BMC Pulm Med. 2017;17(1):215. Published 2017 Dec 28. doi:10.1186/s12890-017-0562-8.

34. Nystad W, Samuelsen SO, Nafstad P, Langhammer A. Association between level of physical activity and lung function among Norwegian men and women: the HUNT study. Int J Tuberc Lung Dis. 2006 Dec;10(12):1399-405. PMID: 17167959.

35. Luis Puente-Maestu, William W. Stringer. Physical activity to improve health: do not forget that the lungs benefit too. European Respiratory Journal. Feb 2018, 51 (2) 1702468;

DOI: 10.1183/13993003.02468-2017.

36. Annabelle Bédard ,Anne-Elie Carsin,Elaine Fuertes,Simone Accordini,Shyamali C. Dharmage,Vanessa Garcia-Larsen,Joachim Heinrich,Christer Janson,Ane Johannessen,Bénédicte Leynaert,José Luis Sánchez-Ramos,Gabriela P. Peralta,Isabelle Pin, [...],Judith Garcia-Aymerich[view all] Physical activity and lung function—Cause or consequence? Published: August 20, 2020 https://doi.org/10.1371/journal.pone.0237769

37. Dogra, S., Good, J., Buman, M.P. et al. Physical activity and sedentary time are related to clinically relevant health outcomes among adults with obstructive lung disease. BMC Pulm Med 18, 98 (2018). https://doi.org/10.1186/s12890-018-0659-8.

38. Kot J, Desola J, Simao AG, Gough-Allen R, Houman R, Meliet JL, Galland F, Mortensen C, Mueller PH, Sippinen S. A European code of good practice for hyperbaric oxygen therapy. Int Marit Health. 2004;55(1-4):121-30. PMID: 15881548.

39. Shailendra Singh, MD1; Steven R. Gambert, MD, AGSF, MACP 1,2. Hyperbaric Oxygen Therapy: A Brief History and Review of its Benefits and

Indications for the Older Adult Patient

40. Mize J, Hamm T, (2021). ” Safety and Hyperbaric Oxygen Therapy ”. In Worth E, Song E, (Eds.) , WoundReference. Available from: https://woundreference.com/app/topic?id=safety-and-hbot. Retrieved on 9/15/21.

41. Kyle J. DuBose; Jeffrey S. Cooper. Hyperbaric Patient Selection. Last Update: July 18, 2021.

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