UNIVERSITAS
GADJAH MADA
**Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring
Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)**
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Al-Mashhadany. (2022). A lip exercise in orthodontics: a review article. *Acad Glo Ind Res*. 3(4): 65-74.

Abdelhamid, M., Marzook, H., Yousef, E. (2022). Evaluation of two computerized methods for presurgical volumetric analysis in secondary alveolar cleft bone grafting: a prospective study. *J Cont Dent Prac*. 23(7): 688-694.

Abdelkarim, A., Khalifa, A., Hassan, M., Abdou, A., Duman, S. (2023). Three-Dimensional assessment of the pharyngeal airway in growing versus non-growing subjects with/without cleft lip and palate. *Anatomia*. 2:192-205.

Acharya, S., Mali, L., Sinha, A., Nanda, S. (2018). Effect of naso-respiratory obstruction with mouth breathing on dentofacial and craniofacial development. *Ortho J Nepal*. 8(1): 22-27.

Akhoon, A., Mushtaq, M., Akhoon, Z. (2021). Myofunctional appliances : an overview. *IJCMR*. 8(9): 11-15.

Alves, M., Baratieri, C., Nojima, L., Nojima, M., Ruellas, A. (2011). Three-dimensional assessment of pharyngeal airway in nasal and mouth-breathing children. *Int J Ped Oto*. 75: 1195-1199.

Alyessary, A., Alnajar, H., Al-Mayali, A., Mohsin, R. (2021). Association of the different lips competency with the molar relationship and anterior open bite malocclusion. *Phys Edu.* 58:6735-6740.

Anastasi, G., dan Dinella, A. (2014). Myobrace system: A no-braces approach to malocclusion and a myofunctional therapy device. *Orthodontics*. 5.

Arambula, A., Brown, J., Kim, J. (2021). Anatomy and physiology of the palatine, tonsils, adenoids, and lingual tonsils. *World J Otorhinolaryngol Head Neck Surg*. 7:155-160.

Azevedo, N., Lima, J., Furlan, R., Motta, A. (2018). Tongue pressure measurement in children with mouth-breathing behavior. *J Oral Rehabil*. 45: 612-617.

Berkovitz, B., Holland, G., Moxham, B., Makdissi, J. (2018). *Oral anatomy, histology and embryology*. Edinburg: Elsevier. hh. 1-2.

UNIVERSITAS
GADJAH MADA
**Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring
Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)**
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Boucher, C., Charezinski, A., Balon-Perin, Janssens, F., Vanmuylder, Gliner, R. (2008). Benefits of using a trainer T4K Myofunctional appliance after rapid palatal expansion: a prospective study on thirteen patients. *J Dentofacial Anom Orthod*. 11: 30-44.

Brodsky, I. dan Koch, R. (1992). Anatomic correlates of normal and diseased adenoids in children. *Laryngoscope*. 102: 1268-1274.

Chatain, E. dab Gaffey, M. (2023). *Upper Airway Obstruction*. Treasure Island: Stat Pearls Publishing.

Chen, K., Chen, Y., Hsiao, S., Chen, M. (2021). Postoperative changes in tongue area and pharyngeal airway space following mandibular setback surgery through intraoral vertical ramus osteotomy. *BioMed Res Int*. 1-7.

Chesya, D., Wibowo, D., Azizah, A. (2021). Hubungan antara kebiasaan buruk bernapas melalui mulut dengan tingkat keparahan maloklusi pada anak sekolah dasar. *J Ked Gi*. 5(3): 117-121.

Chiang, C., Jeffres, M., Miller, A., Hatcher, D. (2012). Three-dimensional airway evaluation in 378 subjects from one university orthodontic clinic using cone beam computed tomography. *Ang Ortho*. 82(6): 985-992.

Cheung, T. dan Oberoi, S. (2012). Three-dimensional assessment of the pharyngeal airway in individuals with non-syndromic cleft lip and palate. *Plos One*. 7(8): 1-5.

Choudhari, S. dan Shrivastav, S. (2021). Comparative evaluation of adenoids, upper airway, and tongue using “predictor of difficult airways” in class II divison I and division 2 cases with class I cases: prospective in vivo observational study. *J Ind Ortho Soc*. 1-10.

Costa, J., Costa, G., Costa, C., Vilella, O., Mattos, C. (2017). Clinical recognition of mouth breathers by orthodontists: a preliminary study. *Am J Orthod Dentofacial Orthop*. 152(5): 646-653.

Damayanti, Y., Soewondo, W., Primarti, R. (2014). Frequency distribution of mouth breathing in children based on age and gender. *Pad J Dent*. 26(1): 75-80

Drevensek, M., Stefanac-Papic, J., Farcnik, F. (2005). The influence of incompetent lip seal on the growth and development of craniofacial complex. *Coll Antropol*. 29(2): 429-434.

UNIVERSITAS
GADJAH MADA
**Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring
Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)**
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Engelke, W., Engelhardt, W., Mendoza-Gartner, M. (2010). Functional treatment of snoring based on the tongue-repositioning manoeuvre. *Eur J Orthod*. 32(5): 490-495.

Fujiwara, A., Kuroyanagi, F., Kawabata, A., Tome, W., Kitai, N. (2015). Relationship between lip-closing force and three-dimensional lip morphology in adults with straight facial profile. *Int J Orofa Myolo*. 41:24-36

Genc, E., Karaman, A., Puskul, G. (2022). Evaluation of dentoskeletal and pharyngeal airway changes after treatment with twinblock and monoblock appliance in growing patients. *J Dent Ina*. 29(3): 211-222.

Genoray (2021). *Papaya 3D Plus CBCT Manual Catalogue* [Brosur]. Korea: Genoray.

Habar, E., Erwansyah, E., Bakri, K. (2021). Mouth breathing habit as an etiological factor of malocclusion: literature review. *Makassar Dent J*. 10(3): 256-259

Habumugisha, J., Ma, S., Mohamed, A., Cheng, B., Zhao, M., Bu, W., Guo, Y., Zou, R., Wang,F. (2022) Three-dimensional evaluation of pharyngeal airway and maxillary arch in mouth and nasal breathing children with skeletal class I and II. *BMC Oral Health* 22:320.

Haiter-Neto, F., Wenzel, A., Gotfredsen, E. (2008). Diagnostic accuracy of cone beam computed tomography scans compared with intraoral image modalities for detection of caries lesions. *Dentomaxillofac Radiol*. 37: 18-22.

Hamaamin, O., Aras, M., Ozturk, M., Mete, A. (2021). The benefit of cone-beam computed tomography (CBCT) in comparison to OPG in the incidental finding (among 70 patients) that they indicate surgical removal of impacted teeth rather than wisdom. *Eura Med Res Period*. 3: 25-36.

Harari, D., Redlich, M., Miri, S., Hamud, T., Gross, M. (2010). The effect of mouth breathing versus nasal breathing on dentofacial and craniofacial development in orthodontic patients. *Laryngoscope*. 120: 2089-2093

Hariharan, A., Rodriguez, S., Alsadi, T. (2025). The role of rapid maxillary expansion in the management of obstructive sleep apnoea: monitoring respiratory parameters-A systematic review and meta-analysis. *J Clin Med*. 14: 1-17.

UNIVERSITAS GADJAH MADA
Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring
Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Heiland, M., Pohlenz, P., Blessmann, M., Habermann, C., Oesterhelweg, I., Begemann, P. (2007). Cervical soft tissue imaging using a mobile CBCT scanner with a flat panel detector in comparison with corresponding CT and MRI data sets. *Oral Surg Med Oral Pathol Oral Radiol Endod*. 104:814-820.

Hockenbury, D. (2018). Can we grow lips in therapy? The efficacy of lip stretching and strengthening exercises in patients with lip incompetence. *J Dent Oral Health*. 4(4): 2-8.

Ibraheemjaafa, M. dan Kadoum, N. (2017). Bad oral habits and associated malocclusion among 8-9 years old children. *IJSR*. 6(6): 84-88.

Ibrahim, F., Rahim, Z., Arifin, N. (2013). Effect of orofacial myofunctional exercise using an oral rehabilitation tool on labial closure strength, tongue elevation strength, and skin elasticity. *J Phys Ther Sci*. 25: 11-14.

Inada E, Kaihara, Yukiko Nogami, Daisuke Murakami, Naoko Kubota, Toshiya Tsujii, Yuki Kiyokawa, Tadashi Sawami, Yushi Yamamoto, Yusuke Ban, Yoichiro Oku, Takeshi Oku. Issei Saitoh. Lip and facial training improves lip-closing strength and facial morphology. *Arch Or Bio* 2023; 154:1-9.

Iannucci, J. dan Howerton, L. (2021). *Dental Radiography*. Elsevier Health Sciences: San Francisco. hh. 306-307.

Ingervall, B. dan Eliasson, G. (1982). Effect of lip training in children with short upper lip. *Angle Orthod*. 52(3): 222-233.

Jayan, B., Vats, R., Sahu, D., Kamat, U. (2009). Cranio-facial morphology, upper airway and orthodontics – the crucial connection. *Indian J Sleep Med*. 4(4): 119-124.

Kaede, K., Kato, T., Yamaguchi, M., Nakamura, N., Yamada, K. (2016). Effects of lip-closing training on maximum voluntary lip-closing force during lip pursing in healthy young adults. *J Oral Rehab*. 43:169-175.

Kang, K., Chou, C., Weng, W., Lee, P., Hsu, W. (2019). Associations between adenotonsillar hypertrophy, age, and obesity in children with obstructive sleep apnea. *PLoS ONE*. 8: 7866.

Khemka, S., Thosar, N., Baliga, S. (2015). Oral gymnastics – way to a harmonious dentition. *Int J Cont Dent Med Rev*. 1:1-8.

Kim, D., Rhee, C., Yun, P., Kim, J. (2015). Adenotonsillar hypertrophy as a risk factor of dentofacial abnormality in korean children. *Eur Arch Otorhinolaryngol*. 272:3311-3316.

UNIVERSITAS GADJAH MADA
Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring
Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Koo, T. dan Li, M. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *J Chirop Med*. 15: 155-163.

Kugimiya, Y., Oki, T., Ohta, M., Ryu, M., Kobayashi, K., Sakurai, K., Ueda, T. (2021). Distribution of lip-seal strength and its relation to oral motor functions. *Clin Exp Dent Res*. 7:1122-1130.

Lambrecths, H., De-Baets, E., Fieuws, S., Willems, G. (2010). Lip and tongue pressure in orthodontic patients. *Eur J Orthod*. 32(4):466-471.

Leung, C. dan Noy, M. The role of myofunctional therapy in pediatric dentistry. *J Cal Dent Assoc*. 52(1):1-4.

Lin, L., Zhao, T., Qin, D., Hua, F., He, H. (2022). The impact of mouth breathing on dentofacial development: A concise review. *Front Public Health*. 1-7.

Litre meter, Oral Academy, Ltd. (2020). *Litre Meter Manual Catalogue* [Brosur]. Japan: Oral Academy Ltd.

Maspero, C., Abate, A., Bellinioni, F., Cavagnetto, D., Lanteri, V., Costa, A. (2019). Comparison of a tridimensional cephalometric analysis performed on 3T-MRI compared with CBCT: a pilot study in adults. *Prog Orthod*. 20-40.

Masutomi, Y., Goto, T., Ichikawa, T. (2024). Mouth breathing reduces oral function in adolescence. *Nature*. 14:3810.

Markkanen, S., Niemi, P., Rautiainen, M., Saarenpaa-Heikkila, O., Himanen, S., Satomaa, A. (2019). Craniofacial and occlusal development in 25-years old children with mouth breathing behavior. *Eur J Orthod*. 41:316-321.

Momany, S., Aljamal, G., Shugga-Addin, B., Khader, Y. (2016). Cone beam computed tomography analysis of upper airway measurements in patients with obstructive sleep apnea. *Am J Med Sci*. 1-8.

Moyers, R. (1988). *Handbook of Orthodontics, 4th Editon*. Year Book Medical Publishers: Michigan. h.84

Myotalea®, MRC. (2023). *Myotalea® Appliances Catalogue* [Brosur]. England: Myofunctional Research Co.

Nogami, Y., Saitoh, I., Inada, E., Murakami, D., Iwase, Y., Kubota, N., Nakamura, Y., Nakakura-Ohshima, K., Suzuki, A., (2022) Lip-closing strength in children is enhanced by lip and facial muscle training. *Clin Exp Dent Res*. 8: 209-216.

UNIVERSITAS GADJAH MADA
Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Noro, A., Hosokawa, S., Takahashi, J., Akihiro, Y., Nishimoto, Y. (2002). Basic and clinical subjects of myofunctional therapy using a new oral rehabilitation apparatus. *Jpn J Conserv Dent*. 45:817-828.

Ohtsuka, M., Kaneko, T., Iida, J. (2015). Effectiveness of training methods to improve orbicularis oris muscle endurance in patients with incompetent lips. *Orthodontic Waves*. 74: 99-104.

Oki, T., Ohta, M., Takano, T., Sakurai, K., Ueda, T. (2020). Effective training duration and frequency for lip-seal training in older people using a self-training instrument. *Gerodontology*.1-7.

OnDemand 3D, Kavo Kerr (2018). *OnDemand 3D Application Training Manual* [Brosur]. Singapore: Kavo Kerr.

Pacheco, M., Casagrande, C., Teixeira, L., Finck, N., Araujo, M. (2015). Guidelines proposal for clinical recognition of mouth breathing children. *Dental Press J Orthod*. 20(4): 39-44.

Park, J., Dong-Hwan, O., Moon-Young, C. (2017). Effect of expiratory muscle strength training on swallowing-related muscle strength in community-dwelling elderly individuals: a randomized controlled trial. *Gerodontology*. 34: 121-128.

Proffit, W., Fields, H., Sarver, D. (2013). *Contemporary Orthodontics 5th Edition*. New Delhi: Elsevier India. hh. 490-505.

Purwanegara, M. dan Sutrisna, B. (2018). Mouth breathing, head posture, and prevalence of adenoid facies in patients with upper respiratory tract obstruction. *J Dent Ind*. 25(1): 58-64.

Radumilo, D., Vucinic, P., Petrovic, D. (2021). The importance of lip muscle activity in determining the position of the anterior teeth in deep bite. *Med Pregl*. 74(7): 244-248.

Raveendranath, V. dan Holla, S. (2019). *Gray's Anatomy for Students*. New Delhi: Elsevier Health Sciences. hh. 1205-1207.

Riswanto, A., Joko, Boari, Y., Taufik, M., Kabanga, T., Irianto. (2023). Metodologi Penelitian Ilmiah : *Panduan Praktis untuk Penelitian Berkualitas*. Jambi : PT Sonpedia Publishing Indonesia. hh. 84-85.

Ryu, M., Oki, T., Ohta, M., Sakurai, K., Ueda, T. (2021). Effect of lip-seal resistance training on lip-seal strength in young adults. *J-STAGE*. 1-8.

UNIVERSITAS
GADJAH MADA
**Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring
Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)**
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Saitoh, I., Inada, E., Kaihara, Y., Nogami, Y., Murakami, D., Kubota, N. (2018). An exploratory study of the factors related to mouth breathing syndrome in primary school children. *Arch Or Bio*. 92: 57-61.

Sabashi, K., Saitoh, I., Yamasaki, Y., Kawabata, A., Mukai, Y., Kitai, N. (2011). Nasal obstruction causes a decrease in lip-closing force. *Angle Orthodontist.* 81(5): 750-753.

Shete, C. dan Bhad, W. (2017). Three-dimensional upper airway changes with mandibular advancement device in patients with obstructive sleep apnea. *Am J Orthod Dentofacial Orthop*. 151(5):941-948.

Suzuki, H., Yoshimiura, M., Iwata, Y., Oguchi, S., Kawara, M., Chow, C. (2017) Lip muscle training improves obstructive sleep apnea and objective sleep: a case report. *Sleeping Sci.*10(3): 128-131.

Swarjana, K. (2022). *Populasi-Sampel, Teknik Sampling dan Bias dalam Penelitian*. Jakarta : Penerbit Andi. h. 30.

Thuer, U. dan Ingervall, B. (1990). Effect of muscle exercise with an oral screen on lip function. *Euro J Ortho*. 12: 198-208.

Torre, C. dan Guilleminault, C. (2018). Establishment of nasal breathing should be the ultimate goal to secure adequate craniofacial and airway development in children. *J Pediatr Rio*. 94(2): 101-103.

Tribuvhanan, L., Savaranakumar, M., (2022) Influence of mode of breathing on pharyngeal airway space and dento facial parameters in children: a short clinical study. *Bulletin of The National Research Centre.* 111(46): 1-7.

Ucar, F. dan Uysal, T. (2011). Orofacial airway dimensions in subjects with class I malocclusion and different growth patterns. *Angle Orthod*. 81: 460-468.

Uhlig, S., Marchesi, L., Duarte, H., Araujo, M. (2015). Association between respiratory and postural adaptations and self-perception of school-aged children with mouth breathing in relation to their quality of life. *Braz J Phys Ther*. 19(3): 201-210.

Valcheva, Z., Arnautska, H., Dimova, M., Ivanova, G., Atanasova, I. (2018). The role of mouth breathing on dentition development and formation. J *of IMAB*. 24(1): 1878-1882.

Veron, H., Antunes, A., Milanesi, J., Correa, E. (2016). Implications of mouth breathing on the pulmonary function and respiratory muscles. *Rev Cefac*. 18(1): 242-251.

UNIVERSITAS
GADJAH MADA
**Pengaruh Pemakaian Lip Trainer terhadap Kekuatan Penutupan Bibir dan Volume Saluran Napas Faring
Atas pada Anak Bernapas Lewat Mulut (Studi CBCT)**
Sabrina Ceasy Anggraeni, Prof. drg. Sri Kuswandari, M.S., Sp. KGA,Subsp.KKA (K)., Ph.D.; drg. Anrizandy Narwidin
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Wasnik, M., Kulkarni, S., Gahlod, N., Khekade, S., Bhattad, D., Shukla, H. (2020). Mouth breahing habit: a review. *Int J Com Med Public Health*. 8(1): 495-501.

Yoshizawa, S., Ohtsuka, M., Kaneko, T., Iida, J. (2016). Study of training for improving lip incompetence. *Orthod Waves*. 75: 45-53.

Zhou, J., Zhu, P., Li, D., Yi, C., Chanf, L., Zhang, Y., Yang, X. (2020). CBCT in evaluating the upper airway changes and respiratory functions in patients with OSAHS. *Authorea.* 1-8.

Zinlsly, S., Moraes, L., Moura, P., Ursi, W. (2010). Assesment of pharyngeal airway space using cone-beam computed tomography. *Dental Press J Orthod.* 15(5): 150-158.