

Tutorial

BITNET: Implications and applications for orofacial myology

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BITNET: IMPLICATIONS AND APPLICATIONS FOR OROFACIAL MYOLOGY

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Dentists, speech pathologists and orofacial myologists today can rapidly examine current information and research using a number of existing computer networks. Dialog, and BRS (Bibliographic Retrieval Services) are examples of systems which are particularly valuable in this respect. A fee is usually charged for communication and search time as well as a citation charge. An educational network such as SpecialNet (National Systems Management, 1988) allows access to over 3000 United States school districts and nearly "40 national information resources/bulletin boards on key topics of interest to administrators, teachers, and academics in the field of education" (p. 1). SpecialNet is available to agencies through a variety of subscription plans.

Computer networks, however, present additional possibilities for educators and researchers. If there were a network connecting dental colleges and universities to permit the rapid transmission of manuscripts, research reports, grant applications, computer data files, and electronic mail, those institutions could more effectively work on joint projects and have improved access to information. If this network were cheaper than the telephone and faster than the United States mail, it would be extremely useful to research and information pursuits in dentistry, speech pathology and orofacial myology.

To borrow a phrase from advertising, "the future is now." Such an inexpensive and efficient system is currently available, unrestricted and open to universities and other agencies with a strong educational base - such as ADA, ASHA, and the IAOM. Unlike other communications networks it is not discipline specific, and its charter specifically states that it is available to faculty and students at both graduate and undergraduate levels. The best news, however, is the cost; the only charge is the regular usage time billed (if any) by the local university computer center. The purpose of this system is to encourage academic and professional communication unlimited by time zones or political boundaries.

History of the Network

Ira H. Fuchs was vice chancellor for University Systems at the City University of New York (CUNY) when he observed the world wide computer network created by the IBM Corporation. This network, known as VNET, provides a means for programmers, researchers and managers to interconnect their computers. The unique part of the system is that it uses standard IBM software and a leased telephone line for connections on the network. Each computer link is responsible for its own con-

nection to the network.

Fuchs conceived the idea of a worldwide network of academic computers which would allow scholars and professional researchers to share ideas and information. His biggest doubt was whether universities would be willing to cooperate on such a project.

In 1981 Fuchs contacted Greyton Freeman, then director of the Yale Computing Center, to explore the idea of interconnection. Freeman also saw the tremendous potential for communications among institutions of higher education. In 1981 Fuchs leased a telephone line to Yale University in New Haven, Connecticut to allow CUNY and Yale University to share computer data. Since there were no technical limitations in the telephone connections which restricted their use to computer programs only, Fuchs and Freeman envisioned the network as transmitting all types of information including memos, reports, grant proposals, financial reports, even collaborative writing projects. They named this infant network BITNET. The BIT does not stand for the computer data unit, but for "Because It's Time" (Fuchs, 1983).

The philosophy behind this new network was a simple one. Each institution would pay for its own link to the network and provide facilities for the connection of at least one new member. This simple concept has allowed such phenomenal growth that the BITNET system now connects more than 900 institutional and departmental computers at over 200 member institutions. BITNET connects directly to the Canadian Academic Network known as NetNorth and the European Academic Research Network (EARN). There is also linkage to Australia and Great Britain's Joint Academic Network (JANET). Plans exist for expansion to Mexico, Israel, Japan and elsewhere in the Far East (BITNET Network Information Center [BIT-NIC], 1986a).

Requirements of the System

BITNET operates through local university mainframe computers, requiring a leased telephone line capable of carrying data at a fairly low rate of 9600 baud and a modem at both the local university computer end and the distant member end. The leased line is paid for by the local computer center. The university must be willing to provide a connection point to a new member and serve as a connection node to the next member in a serial arrangement.

This simple network works on the concept that each node stores and forwards an incoming message or file to the next node. The direction of the transmission is

determined by a routing table that exists at each node location. The BITNET system uses a very common software program known as RSCS (Remote Spooling Communications Subsystems Software) produced by the IBM Corporation (E. Kilcoyne, personal communication, January 15, 1987). Because of this "store and then forward" technique it is estimated that even the busiest nodes make use of less than 1% of the local mainframe's capacity. The required node software is especially easy to install and operate on an IBM mainframe but is also available for other computers like Digital Equipment's VAX systems.

It should be pointed out, however, that one of the weaknesses of the system is that when a node goes down all communications traffic is stopped until the mainframe returns to operation. At this stage there is no redundancy or alternate routing built into the system.

The message or file is finally stored in the addressee's account at the destination. Files may be either messages or entire computer programs. Interactive message capability is possible if the two persons communicating are using IBM mainframe computers. This type of communication is limited to computer center staff because it takes priority over the sending and receiving of files thus slowing down the system.

Membership in the System

Membership in BITNET is available to four types of organizations. Class A members are degree granting institutions of higher education. This, of course, includes dental colleges and speech pathology and dental hygiene departments within those institutions. Class B members are certain consortia and affiliates of institutions of higher education. Class C members are certain nonprofit organizations and would include IAOM, ADA and ASHA. Class D members are certain other organizations. Annual membership fees range from \$750 for members with total annual budgets of up to \$55,000,000 to \$8,000 for members with annual budgets of above \$500,000,000 (BITNIC, 1986b).

EDUCOM, a non-profit consortium of colleges and universities, provides network support. This organization was founded in 1964 for the purpose of facilitating the introduction, use and management of information technology. Located in Princeton, New Jersey, EDUCOM provides a Network Information Center known as BITNIC, which was created with grant support from IBM (Oberst & Smith, 1986).

BITNET maintains numerous connections with other networks called gateways which allow the user to send electronic mail across to other networks. One of the largest such networks connected to BITNET in this manner is ARPANET, the network of the Defense Advanced Research Projects Agency. Another such network with a BITNET gateway is UUCP. UUCP is a Unix software based dial up network with about 1500 nodes worldwide (EDUCOM, 1986).

Implications and Application to Dentistry, Speech Pathology and Orofacial Myology

This existing communications network can be of great

use to all disciplines within orofacial myology. Orofacial myology, speech pathology and dental information can be shared in any form: letters, case studies, memos, manuscripts, grant proposals, newsletters...even transcripts of discussion groups. These electronically transferrable files can be of any type and either in ASCII or binary format.

Such a network would be of great help to *IJOM* and other professional journals. An author of a journal article can transmit a manuscript to the editor who, in turn, can distribute copies of the manuscript to the associate editors for purposes of peer review. Associates can make their comments and recommendations then electronically submit them to the editor for return transmission to the author. There is no longer a postal delay since any of these transmissions usually take less than a minute. Neither is there a postage expense.

Dental and speech pathology research and training centers may quickly distribute research findings to the professional community. In a matter of minutes entire reports can be submitted to funding agencies. Moreover, a dentist could conceivably request a document from the American Dental Association (ADA) and receive a prompt reply as to the document's availability. The required documents could be sent to the user in the form of computer files.

File Servers

The system also has the capability of handling file servers which are software programs that at a given time automatically mail a file to a list of hundreds of subscribers. The required software is inexpensive and readily available for most mainframe computers (BITNET, 1986c). The impact of this resource on the orofacial myology profession can be enormous. It presents numerous inexpensive option to facilitate communication between university based training programs and collaborating agencies.

Inexpensive Newsletters

Time and money could be saved regarding the IAOM Newsletter. The file server makes possible the "publication of an on-line newsletter." It sends copy of a newsletter to a subscriber's local mainframe computer mail account electronically. With such electronic distribution neither printing nor postage costs are involved. The only transmission costs are the association's or university's telephone line lease and annual BITNET fee. The University of South Dakota now operates a file server known as the "Handicapped Digest" and receives electronically transmitted articles from contributors. The newsletter is then electronically transmitted two to three times weekly to over 400 subscribers in the United States, Canada and Europe (B. Puryear, Editor, Handicapped Digest, Personnel Communication, May, 1988).

Discussion Groups

This inexpensive method of distributing information could also impact orofacial myologists through the creation of electronic discussion groups, similar in some ways

to electronic bulletin boards. Individuals could send electronic messages to the discussion center with these messages becoming part of the transcript. These discussion groups could be informal. Imagine sitting around a table with colleagues sharing ideas and problems related to orofacial myology, dentistry and speech pathology. This brainstorming and problem solving could be shared through BITNET. Ideas shared in this manner would not get lost, never making it into print or publication, and their audience would not be limited. With BITNET there is a written record of ideas to which any discussion member can have access immediately or at a later time.

International Implications

The IAOM is an international organization with members and journal subscribers in Japan, Great Britain and other countries. BITNET file servers open up the possibility of inexpensive international conferences with contributors from Western Europe, Israel, Central and South America and the Far East. Papers may be submitted and almost instantly shared with all who wish to participate. Readers can enter written comments to the "presenters" which may also be shared with the audience. There is no travel time and no struggle with time zones (as with audio and video teleconferences). The best part, however, is that conferences of this nature can be held at virtually no expense.

Insurance Information

Liability insurance plus insurance company billing are major concerns of the various disciplines represented in the IAOM. Through BITNET, an information exchange program could be established, and professional organizations or the individual practitioner could share ideas and receive insurance updates on a regular basis.

BITNET Nodes on Training Program Campuses

To use BITNET the dental or speech pathology training program need only have a mainframe account number. It is not necessary to have a direct line to the mainframe computer; a dial up modem link is sufficient. (Such modems now sell for less than \$80). BITNET membership expressly prohibits universities for charging for BITNET usage.

Immediate Use of BITNET for IAOM Members

IAOM members with close ties to universities which have BITNET nodes may make immediate use of the network. For example, the University of Utah Business and Medical Schools both are BITNET members. The University of Utah Communication Disorders Department should have easy access to the nodes which have already been established on the campus and, therefore, to the wealth of services and potential which BITNET offers.

IAOM members who have personal computers should be able to "tie into" BITNET nodes at universities within their locales. Most IAOM members live within the operating distance of a university which either currently belongs to the network or which should be encouraged to establish a BITNET node. IAOM members who are on the faculties of universities with BITNET nodes include those stationed at Stephen F. Austin State University in Nacogdoches, TX; Loma Linda University in Loma Linda, CA; Arizona State University at Tempe, AR; University of North Carolina as well as the University of Utah. These faculty members could be instrumental in aiding other IAOM members in "typing in" with their personal computers.

Individuals or organizations interested in obtaining more information concerning BITNET are encouraged to contact EDUCOM, P.O. Box 364, Princeton, NJ 08540 or phone 609-520-3777.

Summary

The future is indeed *now!* Dental, speech pathology and orofacial myology associations have available to them an extremely useful and inexpensive communications tool which allows them to communicate with hundreds of training programs and professional associations in this country, Canada and other countries. It is unrestricted and open to professors, students and professionals. It is a swift, efficient way to share ideas, transmit manuscripts, collaborate on research, hold discussion groups and promote ongoing communications among professionals worldwide.

Questions and comments may be addressed to Dr. William F. Weber, P.O. Box 13019, Stephen F. Austin State University, Nacogdoches, TX 75962.

REFERENCES

- BITNET Network Information Center (BITNIC). (1986a). BITNET and the BITNIC. Princeton, NJ: EDUCOM.
- BITNET Network Information Center (BITNIC). (1986b). BITNIC's mail list server. Princeton, NJ: EDUCOM.
- BITNET Network Information Center (BITNIC). (1986c). Criteria for BITNET membership. Princeton, NJ: EDUCOM.
- EDUCOM. (1986). On site: Argonne national laboratory. *Networking*, 2(1), 1-16.
- Fuchs, I.H. (1983). BITNET - Because it's time. *Perspectives in Computing*, 3(1), 16-27.
- National Council on Rehabilitation Education. (1987). *Membership Directory*.
- National Systems Management, Inc. (1988). *Questions and answers about SpecialNet*. Washington, D.C.: Author.
- Oberst, D.J. & Smith, S.B. (1986). BITNET: Past, present, and future. *EDUCOM Bulletin*, 21(2), 10-17.

MYOFUNKTIONELLE THERAPIE

by Vevi Hahn

Review

An interesting new publication in German, from Profil publishers, describes the development of myofunctional therapy and traces its origins in this century. Previously, little attempt has been made to show its interdisciplinary relationships with speech pathology and education. It is apparent that several disciplines are concerned with orofacial myofunctional disorders.

Dysfunctions of the tongue, the lips and cheeks, mouth breathing, sucking habits and other oral habits have many different causes. These dysfunctions can affect all aspects of oral functioning, not only speech articulation, but also dental occlusion and mandibular posture and function. The author contends that if an abnormal swallowing pattern occurs with a speech articulation disorder, traditional speech therapy offers little to correct the problems. The results of this ten year, long term

study demonstrate that myofunctional therapy can be of help in such cases. This research investigation discriminates between the claims and the results of the various goals of myofunctional therapy and encourages speech-language pathologists, dentists, orthodontists and physicians to work together to resolve these problems.

The author, Vevi Hahn, has completed degrees in elementary education and special education and received her Ph.D. from Ludwig Maximilian University, Munich in 1988. She has provided myofunctional therapy in a dental practice since 1978. Also, she has served as advisor for the European symposiums on Myofunctional Therapy in Munich, Hamburg and Wurzburg, where she has given presentations and training courses in myofunctional therapy.

Myofunktionelle Therapie (1988) by Vevi Hahn is published by Profil Verlag. Cost: D M 69.80. ISBN 3-89019-212-2. This text can be ordered by sending a money order for this amount to the publisher:

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Editor's Note: This review was provided by Hahn's Publisher, Profil Verlag.

CORRECTION OF TONGUE - THRUST SWALLOWING HABITS

by Joseph L. Wasson, DDS., MS.

from *Journal of Clinical Orthodontics*: January 1989

Reviewed by Marvin L. Hanson, Ph.D.

Dr. Wasson presents a reasonably clear description of the Falk Neuromuscular Facilitation approach to the correction of oral myofunctional disorders. This approach was described by Falk in an *IJOM* article (1977). Wasson has changed the original procedures very little. An experienced orofacial myologist should be able to apply the procedures with little risk of serious error.

However several elements of this treatment approach lack a theoretical rationale. It also seems unfortunate that the emphasis is on changing the swallowing patterns whereas current opinion and research suggest that our efforts should focus on establishing an appropriate oral rest posture. Although the author suggests a closed lips posture should be attained, this article offers no suggestions as to how this may be achieved. In my experience, stretching exercises are often necessary to relax a tight upper lip or mentalis.

Dr. Wasson reports a high level of success for this treatment method within his practice. It would have been helpful to know the criteria for successful treatment outcome. Many patients seen in a typical orofacial myology practice have complex problems often extending beyond the most apparent tongue thrust swallow pattern. Additional problems may include: Esthetic and functional problems of biting, chewing and gathering food; difficulties gathering saliva or liquids prior to swallowing; speech articulation problems; esthetic problems of altered head and neck postures which can predispose the patient to posture the lips apart and the tongue forward; air swallowing; or other oral habits which can affect the occlusion and/or interfere with habituation of the new oral functions and postures.

Bases for the following procedures are questionable: The patient hyperextends the tongue while brushing the lateral aspects of the tongue. Does this work better than with the tongue contained within the oral cavity? Why does brushing the sides of the tongue improve tonus in

the whole tongue? The procedure purports to eliminate the "typical broad, flat configuration of the tongue upon extension." What is the reason for concern over the configuration of the tongue upon protrusion?

Apparently instructions for eating, drinking and swallowing saliva are not included in the program. The transfer to very complex processes of reflexive postures and movements elicited in therapy seems unlikely. Why not use the neuromuscular procedures as bases, or at least as parts, of a program that attends to the actual behaviors themselves? It is stated that exercises involving lateral pressures to the tongue bring about narrowing and retraction of the tongue. The narrowing seems logical, but there seems no rationale for this procedure to produce retraction of the tongue. The rationale for applying digital pressure under the chin before the patient swallows also seems obscure. This author advocates a molar -occluded resting posture. This is, according to my experience, an abnormal and potentially harmful practice. The problems that can result from jaw clenching behaviors are well known.

I have tried most of these procedures as adjuncts to my therapy program in my practice of orofacial myology. I have found that tapping the dorsum of the tongue and stroking the lateral margins of the tongue (with the tongue narrowed but not extended) to be useful. The effects of icing were reported by my patients to persist for under a minute. Further research of the type reported by Falk, would be useful. Marshalla (1985) has written a detailed article on the role of reflexes in oral motor learning, which would be an excellent complement to the study of Falk's research.

As clinicians we are naturally eager to discover the most efficient and effective methods of treating orofacial myofunctional disorders. Unfortunately an overly simplistic approach may leave many of the patient's problems unresolved.

REFERENCES

Falk, M.L. (1977). Treatment of deviant swallow patterns with neuromuscular facilitation. *The International Journal of Oral Myology*, 3, (1) 27-29.

Marshalla, Rosenwinkle, P. (1985). The role of reflexes in oral - motor learning: Techniques for improved articulation. *Seminars in Speech and Language*, 6, (4) 317-335.

Index to Volume XV 1989

Author Index

- Ash, David C. and Zetz, Michael R. Diagnostic and operative arthroscopy of the temporomandibular joint, Number 2, 9-11.
- Dolan, Edward A., Riski, John E. and Mason, Robert M. Macroglossia: Clinical considerations, Number 2, 4-7.
- Keatley, Mary Ann and Coulson, Sandra. Program evaluation in orofacial myology, Number 3, 8-14
- Kellum, Gloria D. et al. Orofacial myofunctional factors at ages six and eight, Number 3, 3-7
- Mew, John R.C. A personal view of oral myofunctional therapy in Britain, Number 2, 15-16.
- Moreira, Marcia and De Paiva Lino, Alael. Evaluation of palatal depth and width in mouth breathers with primary dentition, Number 1, 19-24.
- Riski, John E., Cole, T. Boyce and Fisher, Samuel R. Posterior rhinomanometric evaluation of surgical treatment for nasal airway interference, Number 1, 10-13.
- Snow, Marjorie. Motivating difficult or handicapped patients, Number 2, 12-14.
- Weber, William F., Weigel, Kathleen W. and Stanley, Elnita. BITNET: Implications and applications for orofacial myology, Number 3, 17-19
- Winchell, Becky. Orofacial myofunctional therapy for adult patients, Number 1, 14-18.
- Zimmerman, Joseph B. Orofacial myofunctional therapy for bilateral tongue posture and tongue thrust associated with open bite: A case report. Number 1, 5-9.

Title Index

- BITNET. William F. Weber, Kathleen W. Weigel and Elnita Stanley, Number 3, 17-19
- Diagnostic and operative arthroscopy of the temporomandibular joint. David C. Ash and Michael R. Zetz, Number 2, 9-11.
- Evaluation of palatal depth and width in mouth breathers with primary dentition. Marcia Moreira and Alael De Paiva Lino, Number 1, 19-24.
- Macroglossia: Clinical considerations. Edward A. Dolan, John E. Riski and Robert M. Mason, Number 2, 4-7.
- Motivating the difficult or handicapped patient. Marjorie Snow, Number 2, 12-14.
- Orofacial myofunctional factors at ages six and eight. Gloria D. Kellum et al., Number 3, 3-7
- Orofacial myofunctional therapy for adult patients. Becky Winchell, Number 1, 14-18.
- Orofacial myofunctional therapy for bilateral tongue posture and tongue thrust associated with open bite: A case report. Joseph B. Zimmerman, Number 1, 5-9.
- Personal view of oral myofunctional therapy in Britain, A. John R.C. Mew, Number 2, 15-16.
- Posterior rhinomanometric evaluation of surgical treatment for nasal airway interference. John E. Riski, T. Boyce Cole and Samuel R. Fisher, Number 1, 10-13.
- Program evaluation in orofacial myology. Mary Ann Keatley and Sandra Coulson, Number 3, 8-14.

Abstracts

- Eslami, Ahmad and Sadeghi, Ezedin M. Mouthbreather's gingivitis a clinicopathologic review. As abstracted in *General Dentistry*; Reprinted, Number 2, 19.
- Hahn, Vevi, (1988). *Myofunktionelle Therapie*. Munich: Profil Verlag. Abstracted by the publisher, Number 3, 20.
- Hansen, Carl A. and Singer, Michael T. Correction of defective sibilant phonation created by a complete maxillary artificial denture. *General Dentistry*, September-October, 1987. Abstracted by Elnita Stanley, Number 1, 25.
- Hanson, Marvin L. and Barrett, Richard H. (1988). *Fundamentals of Orofacial Myology*. Springfield, IL: Charles C. Thomas. Abstracted by Randi Miller, Number 2, 18.
- Mew, John R.C. (1986). *Biobloc Therapy*. Langton Green, England: Flo-Print. Abstracted by Barbara Coughlin Eck, Number 2, 17.
- Wasson, Joseph L. Correction of tongue-thrust swallowing habits. *Journal of Clinical Orthodontics*, January, 1989. Abstracted by Marvin Hanson, Number 3, 21.