講 演

マリガン 教授　南カリフォルニア大学

「口腔乾燥症や舌痛症の診断治療を学生にどのように教育するか？」

Prof. Roseann Mulligan
University of Southern California

“How to teach about the management of dry mouth and burningmouth syndrome to dental students”

この講演資料（PDF、ビデオ）は以下でご覧いただけます

昭和大学 歯学部 スペシャルニーズ口腔医学講座 歯学教育学部門 Web サイト
http://dedu.showa-u.ac.jp/project/report_ws_03.html









Educating Dentists about Burning Mouth and Dry Mouth

Roseann Mulligan, D.D.S., M.S.

Associate Dean, Community Health Programs and Hospital Affairs
Chair, Division of Dental Public Health & Pediatric Dentistry
Charles M. Goldstein Professor of Community Dentistry
Ostrow School of Dentistry of University of Southern California



Dr. Mulligan is Associate Dean, Community Health Programs and Hospital Affairs, Chair, Division of Dental Public Health and Pediatric Dentistry and Charles M. Goldstein Professor of Community Dentistry. Ostrow School of Dentistry of USC.

Dr. Mulligan is expert in dentistry for special patients, including geriatric dentistry, dentistry for the special patient (including the mentally handicapped, physically challenged or medically compromised). She is also expert in community health and its funding, the oral health of geriatric patients and HIV-infected women.

Dr. Mulligan is Fellow, Gerontological Society of America and Academy of Dentistry for the Handicapped and Past President, Academy of Dentistry for the Handicapped. She is Secretary and Board Member, Past President, American Society for Geriatric Dentistry.

3rd Workshop on the 21th of November, at Showa University

under the Program for Promoting Inter-University Collaborative Education among Showa University, Iwate Medical University and Health Sciences University of Hokkaido by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).

歯科医のための舌痛症と口腔乾燥症教育

「もし歯学部学生が臨床実習中に、口腔乾燥症と舌痛症の患者さんを担当した経験が少ない又は無いのであれば、彼らはどのように学習すればよいのだろうか？」

卒前の臨床経験が限られている時に考えられる解決方法：

１． 基礎知識の提供

□事前学習　→　解説講義

□インタラクティブな講義: 例）　ARS (聴者回答システム)　協調したい点

□PBL のようなグループディスカッション

２．患者を実際に診る代わりの経験

□病理スライド集 - 可能な場合 -

□グループでのケーススタディー（PBL 又は症例ベース）

□個人でのケーススタディー　（増進因子を加えて）VP を含む

３． 実際に患者を診る経験

□患者が多い施設での臨床実習　（高齢者施設、老人ホームなど）

JIT(Just in Time) 学習：必要になった際に学ぶのが最も効果的である。

Barsalou 1999; Brown et al. 1989; Glenberg and Robertson 1999

JIT(Just in Time)学習: 教室での能動的学習法と IT 教材による学習を組み合わせて行うのが効果的である。

Gregor Novak, Distinguished Scholar in Residence, US Air Force Academy Friday, September 15, 2006

臨床経験が限られている場合のコンピテンシーの評価方法

・TOSCE (時間制客観的臨床能力試験)

・模擬患者を用いた試験

・VP を用いた試験

教育提言のまとめ

１． 能動的、参加型学習を行う。

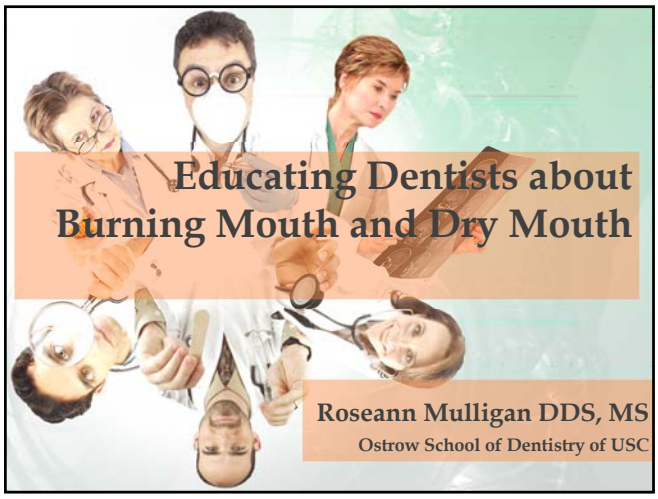
２． 症例に基づいたシナリオ（case based study）を活用する。

３． 知識だけでなくコンピテンシーの評価を実施する。

４．

マリガン教授の講演ビデオは以下でご覧になれます。

http://dedu.showa-u.ac.jp/project/report_ws_03.html



Educating Dentists about Burning Mouth and Dry Mouth

Roseann Mulligan DDS, MS
Ostrow School of Dentistry of USC



歯科医のための舌痛症と口腔乾燥症の教育

Roseann Mulligan DDS, MS
Ostrow School of Dentistry of USC

Today's Discussion

If DDS students have little (severe dry mouth) to no (BMS) experience diagnosing and managing these complex conditions during their clinical educational programs, how will they become proficient?



本日のテーマ

もし歯学部学生が臨床教育中に、口腔乾燥症と舌痛症の診断およびマネージメントをした経験が少ない又は無いのであれば、彼らはどのように熟達すればよいのだろうか？



Usual Teaching Methodology for BMS and Severe Dry Mouth Topics



http://www.udmercy.edu/giving/newsletter/2011-06/dental-facility.htm

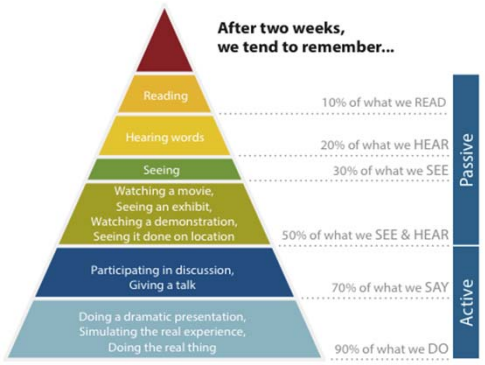
- Lectures
- Viewing clinical slides
- Reading assignments
- Fact-based exams (MC, Fill-in, short answer)

舌痛症と口腔乾燥症のトピックの通常教育方法

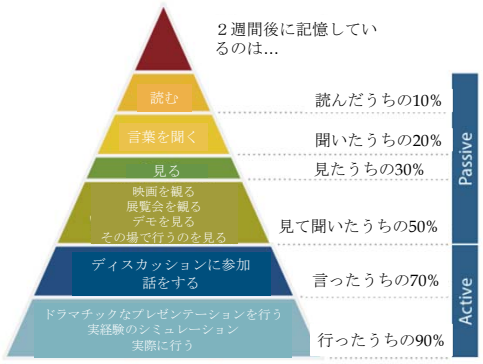


http://www.udmercy.edu/giving/newsletter/2011-06/dental-facility.htm

- 講義
- 症例スライドの観賞
- テキストや文献を読む
- 事実に基づいた試験 (MCQ, 穴埋め, 小論文)



(Based on the research of Edgar Dale, originator of "The Cone of Learning.")



Edgar Dale氏の研究による、「学習の三角錐」より。

Dental Students have little opportunity to take the lead in managing these patients while in school

Burning Mouth Syndrome



Severe Dry Mouth



歯学部学生は在学中、自らが率先してこのような患者のマネージメントを行う機会が少ない。

舌痛症



重度の口腔乾燥症



Possible Solutions When There is a Lack of Dental School Clinical Exposures

~Discussion Topics~

- Providing the basic information
- Experiences in place of live patients
- Experiences with Live Patients
- Assessing Competency

卒前の臨床経験が限られている時に考えられる解決方法

~ディスカッションのトピックス~

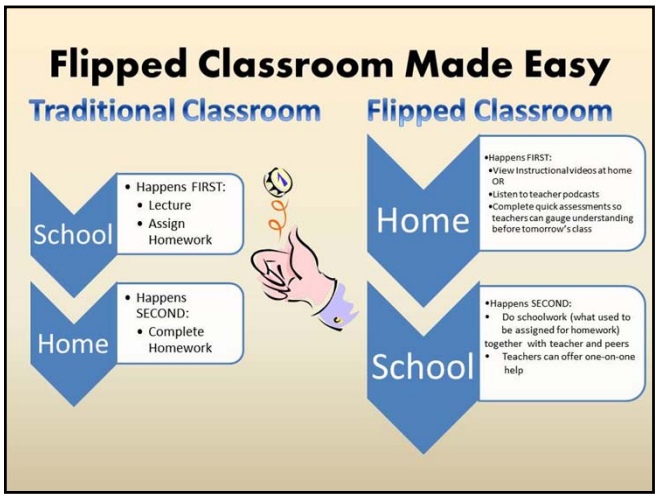
- 基礎知識の提供
- 実際に患者を診る経験
- 実際に患者を診る代わりの経験
- コンピテンシーの評価

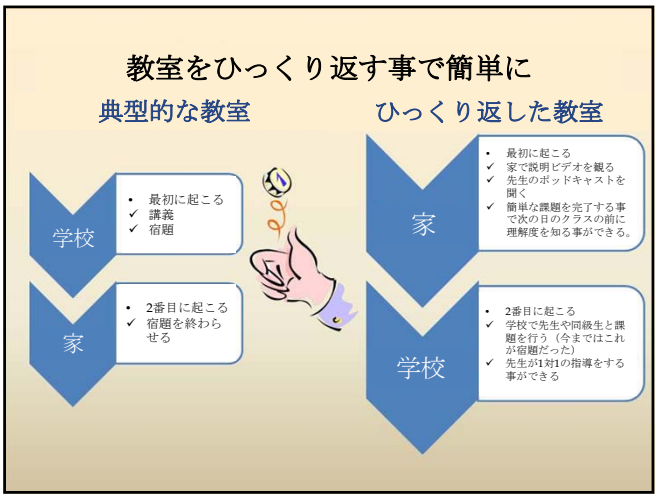
Possible Solutions When There is a Lack of Dental School Clinical Exposures

- **Providing the basic information**
  - Typical Lecture Format
  - Flipping the Classroom
  - Interactivity lecture: e.g. ARS (Audience Response Systems)
  - Group Discussions such as PBL

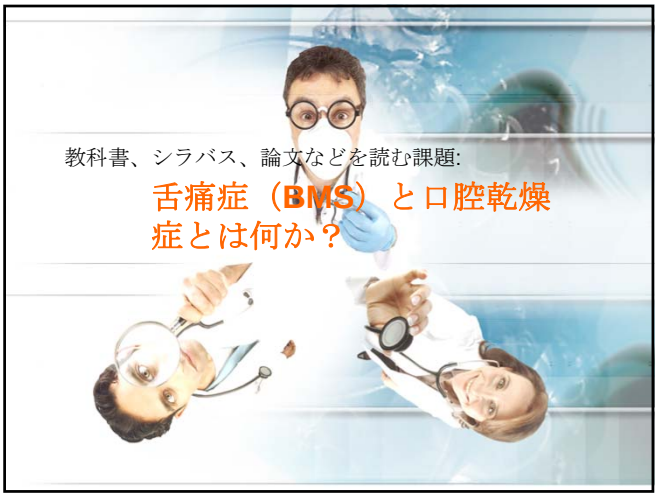
卒前の臨床経験が限られている時に考えられる解決方法

- **基礎知識の提供**
  - 典型的な講義形式
  - 教室をひっくり返す
  - インタラクティブな講義: 例） ARS (聴者回答システム)
  - PBLのようなグループディスカッション









Diagnosis of Burning Mouth Syndrome!

- ✓ Chronic, idiopathic intraoral mucosal pain
- ✓ Accompanied by
  - Xerostomia
  - Taste disturbances
- ✓ Not accompanied by
  - Clinical lesions
  - Systemic diseases

Patton LL, et al. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2007 Mar;103 Suppl:S39.e1-13.

舌痛症の診断

- ✓ 慢性的特発的口腔粘膜の疼痛
- ✓ 随発
  - 口腔乾燥感
  - 味覚異常
- ✓ 随発しない
  - 臨床病変
  - 全身性疾患

Patton LL, et al. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2007 Mar;103 Suppl:S39.e1-13.

Prevalence of BMS

- No racial or ethnic predisposition
- 0.7%-4% of US adults have BMS
- 7-16% of European adults report BMS
- 32.8% of Fibromyalgia cases have BMS
- 7:1 F:M and > 90 % postmenopausal
- BMS is highly uncommon in women under 30 and men under 40



Berndahl M, Berndahl J J Oral Pathol Med. Sep 1999;28(8):350-4.

舌痛症の有病率

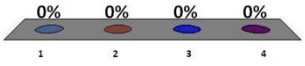
- 人種間・民族間による傾向は無い
- アメリカ成人の0.7%-4%が舌痛症を有する
- ヨーロッパ成人の7-16%が舌痛症を報告
- 線維筋痛症の32.8%が舌痛症を有する
- 7:1 女:男 で > 90%が閉経後
- 舌痛症は30歳以下男性と40歳以下女性では非常に稀である



Berndahl M, Berndahl J J Oral Pathol Med. Sep 1999;28(8):350-4.

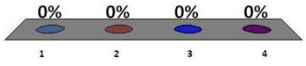
Which of the following is not a symptom of burning mouth?

1. Bitter or metallic changes in taste.
2. Tingling or numbness at the tip of the tongue or in the mouth.
3. Shortness of breath
4. Dry or sore mouth

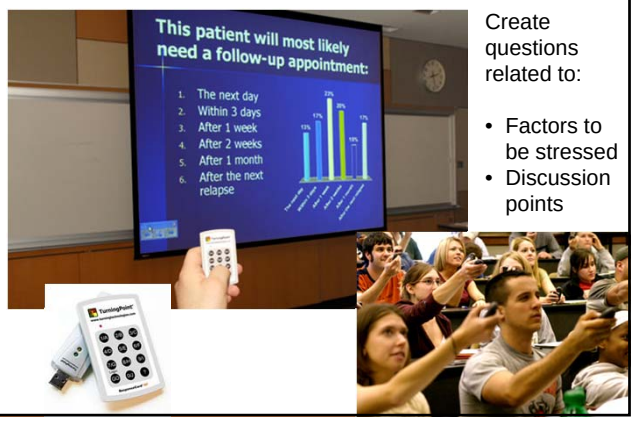


舌痛症の症状でないのは以下のうちどれか？

1. 味の苦味・金属味への変化
2. 舌尖部または口腔内のピリピリ感または知覚鈍麻
3. 息切れ
4. 口の乾燥またはヒリヒリ感



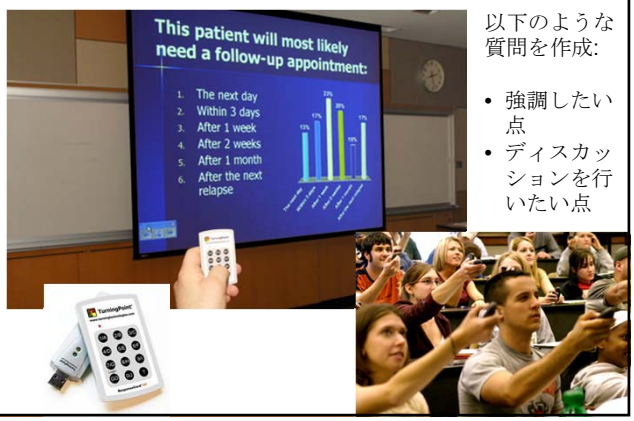
Audience Response System



Create questions related to:

- Factors to be stressed
- Discussion points

聴者反応システム

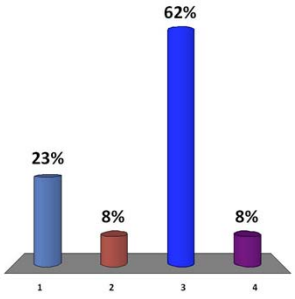


以下のような質問を作成:

- 強調したい点
- ディスカッションを行いたい点

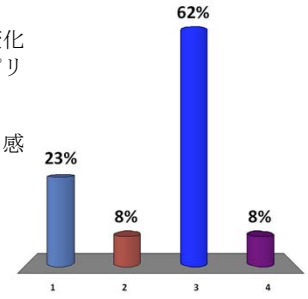
Which of the following is not a symptom of burning mouth?

1. Bitter or metallic changes in taste.
2. Tingling or numbness at the tip of the tongue or in the mouth.
3. Shortness of breath
4. Dry or sore mouth



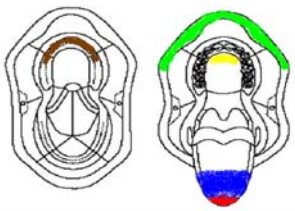
舌痛症の症状でないのは以下のうちどれか？

1. 味の苦味・金属味への変化
2. 舌尖部または口腔内のピリピリ感または知覚鈍麻
3. 息切れ
4. 口の乾燥またはヒリヒリ感



BMS involves the lips and tongue (mainly the tip & anterior 2/3rds).

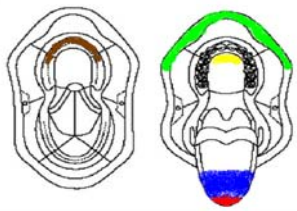




http://www.youtube.com/watch?v=a9goYyu2_jg

舌痛症は口唇と舌に発症する (主に舌尖部 & 舌前方 2/3).





http://www.youtube.com/watch?v=a9goYyu2_jg

Possible Solutions When There is a Lack of Dental School Clinical Exposures

- **Providing the basic information**
  - Typical Lecture Format
  - Flipping the Classroom
  - Interaction with ARS (Audience Response Systems)
  - **Group Discussions such as PBL**



卒前の臨床経験が限られている時に考えられる解決方法

- **基礎知識の提供**
  - 典型的な講義形式
  - 教室をひっくり返す
  - インタラクティブな講義: 例） ARS (聴者回答システム)
  - **PBLのようなグループディスカッション**



Set up the Activity
Short introductions:

BMS is best subcategorized as:
1° BMS (no other evident disease)
2° BMS *(burning from other abnormality)*



アクティビティのセットアップ
簡単な概説:

舌痛症は以下の小分類に分類される:
一次性舌痛症（その他の原因疾患が認められない）
二次性舌痛症（その他の原因疾患により起こる痛み）



GROUP DISCUSSION POINTS ON MANAGEMENT OF PATIENTS WITH BMS

1. What might be treatable secondary causes that could result in primary BMS like symptoms?
2. Are topicals and cognitive therapy efficacious in some patients with BMS? If so, describe them and their mechanisms.
3. Is there an effective agent being used today to treat BMS? If so, how effective is it and what is its mechanism?
4. Where is future research on BMS headed? Is it going in the right direction?





舌痛症患者のマネージメントをテーマとしたグループディスカッションの要点

1. 治療可能な二次的因子で、一次性舌痛症様症状を引き起こす可能性のある疾患は何か？
2. 局所治療と認知療法は舌痛症患者に有効な場合があるか？そうであれば、どのような方法か、そして作用機序について説明せよ。
3. 現在、舌痛症に有効とされる治療は存在するか？そうであれば、どれほど有効か、そして作用機序は何か？
4. 現在、舌痛症の研究などのような方向に向かっているか？それは正しい方向であるか？



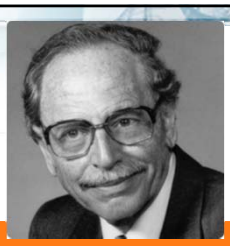


What is Dry Mouth ?

Limited Introduction
Touches on Themes

口腔乾燥症とは何か？

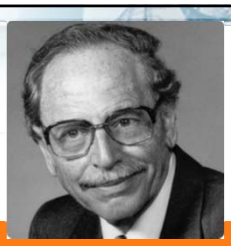
簡潔な概説
テーマに触れる



Irwin D. Mandel DDS, ScD

"Saliva is not one of the popular bodily fluids. It lacks the drama of blood, the sincerity of sweat and the emotional appeal of tears."

Mandel, Irwin D. Journal of Oral Pathology & Medicine 1990.



Irwin D. Mandel DDS, ScD

"唾液はあまり人気のある体液ではない。血液の持つドラマ、汗の丹精さ、そして涙の感情的表現に欠ける"

Mandel, Irwin D. Journal of Oral Pathology & Medicine 1990.

Review: Functions of Saliva

Lubricatory proteins	Antibacterial factors to regulate the distribution and numbers of oral microorganisms	"Remineralizing" proteins allowing supersaturation
Inorganic and organic buffers to neutralize proton production by cariogenic bacteria	Appropriate viscosity contributing to dissolve tastants and contribute to food bolus formation	Aiding initial stages of deglutition

復習：唾液の機能

潤滑性タンパク質	口腔内微生物の分布と数を抑制する抗菌因子	"再石灰化" タンパク質の過飽和状態
齲蝕原因細菌のプロトン産生能力を無効化する有機・無機の緩衝作用	味物質の溶解と食塊の形成に適した粘稠性	嚥下の初期ステージの援助

Causes of Salivary Hypofunction

- Systemic Disease
- Medications
- Radiation therapy head and neck
- Other

唾液腺機能低下の原因

- 全身性疾患
- 薬剤
- 頭頸部の放射線治療
- その他

Age Changes in Salivary Glands and Salivary Secretion

There is NO generalized diminution in salivary gland performance with increasing age or **Salivary Hypofunction**

≠

Sensation of having a Dry Mouth
Xerostomia



唾液腺と唾液分泌の加齢変化

加齢による一般的な唾液腺の機能低下は無い
唾液腺機能低下

≠

口の中が乾いているという感覚
口腔乾燥感



Mean Flow Rate, SGH and Xerostomia by Age Group and Sex (n = 700)

	Mean Flow Rate (SD)	SGH Prevalence (%)	Xerostomia Prevalence (%)
Age group			
65-69 years	0.29 (0.25)	40 (21.7)	37 (20.1)
70-79 years	0.27 (0.22)	62 (20.1)	62 (20.1)
80+ years	0.25 (0.20)	49 (25.7)	41 (21.5)
Sex			
Female	0.23 (0.19)[a]	66 (18.1)[a]	63 (17.3)[b]
Male	0.30 (0.24)	85 (26.6)	77 (24.1)
All combined	0.27 (0.22)	151 (22.1)	140 (20.5)

[a] $P < 0.01$.
[b] $P < 0.05$.

Thomson M. et al. Spec Care Dentist. 1999 Jan-Feb;19(1):20-3

年齢と性別における平均唾液流量、唾液腺機能低下、口腔乾燥感 (n = 700)

	平均唾液流量（SD）	唾液腺機能低下有病率（%）	口腔乾燥感有病率（%）
年齢群			
65-69 years	0.29 (0.25)	40 (21.7)	37 (20.1)
70-79 years	0.27 (0.22)	62 (20.1)	62 (20.1)
80+ years	0.25 (0.20)	49 (25.7)	41 (21.5)
性別			
Female	0.23 (0.19)[a]	66 (18.1)[a]	63 (17.3)[b]
Male	0.30 (0.24)	85 (26.6)	77 (24.1)
総和	0.27 (0.22)	151 (22.1)	140 (20.5)

[a] $P < 0.01$.
[b] $P < 0.05$.

Thomson M. et al. Spec Care Dentist. 1999 Jan-Feb;19(1):20-3

Relationship Between Xerostomia and Salivary Gland Hypofunction (N = 700)

		Salivary Gland Hypofunction		
		Yes	No	Total
Sexes combined				
Xerostomia	Yes	39 (5.7%)	101 (14.8%)	140 (20.5%)
	No	112 (16.4%)	432 (63.2%)	544 (79.5%)
	Total	151 (22.1%)	533 (77.9%)	684 (100.0%)
Females only				
Xerostomia	Yes	26 (8.1%)	51 (15.9%)	77 (24.1%)
	No	59 (18.4%)	184 (57.5%)	243 (75.9%)
	Total	85 (26.6%)	235 (73.4%)	320 (100.0%)
Males only				
Xerostomia	Yes	13 (3.6%)	50 (13.7%)	63 (17.3%)
	No	53 (14.6%)	248 (68.1%)	301 (82.7%)
	Total	66 (18.1%)	298 (81.9%)	364 (100.0%)

Thomson M. et al. Spec Care Dentist. 1999 Jan-Feb;19(1):20-3

口腔乾燥感と唾液腺機能低下の関連性 (N = 700)

		唾液腺機能低下		
		Yes	No	Total
男+女				
口腔乾燥感	Yes	39 (5.7%)	101 (14.8%)	140 (20.5%)
	No	112 (16.4%)	432 (63.2%)	544 (79.5%)
	Total	151 (22.1%)	533 (77.9%)	684 (100.0%)
女性のみ				
口腔乾燥感	Yes	26 (8.1%)	51 (15.9%)	77 (24.1%)
	No	59 (18.4%)	184 (57.5%)	243 (75.9%)
	Total	85 (26.6%)	235 (73.4%)	320 (100.0%)
男性のみ				
口腔乾燥感	Yes	13 (3.6%)	50 (13.7%)	63 (17.3%)
	No	53 (14.6%)	248 (68.1%)	301 (82.7%)
	Total	66 (18.1%)	298 (81.9%)	364 (100.0%)

Thomson M. et al. Spec Care Dentist. 1999 Jan-Feb;19(1):20-3

Possible Solutions When There is a Lack of Dental School Clinical Exposures

- **Experiences in place of live patients**
  - Pathology slide library – when possible
  - Case Studies in Group Activities (PBL or case-based)
  - Individual case studies (with enhancements)
    - Paper-based
    - Computer-based
    - Videos
    - Combinations of the above types
    - High fidelity simulations (virtual patients)

卒前の臨床経験が限られている時に考えられる解決方法

- **患者を実際に診る代わりの経験**
  - 病理スライド集 - 可能な場合 -
  - グループでのケーススタディー（PBL又は症例ベース）
  - 個人でのケーススタディー （増進因子を加えて）
    - 紙ベース
    - コンピューターベース
    - ビデオ
    - 上記の組み合わせ
    - 高性能なシミュレーション（仮想患者）

Case # 178

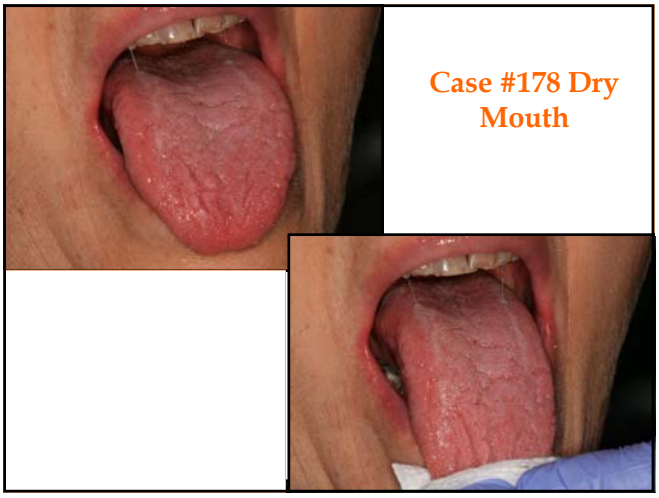
- 48 y/o Indian female
- CC: Urgent need for dental treatment because nobody wants to "touch her"
- Patient with history of Hodgkin's Lymphoma
- Bone marrow transplant
- Myastenia Gravis
- IV Bisphosphonate use

症例# 178

- ４８歳インド人女性
- 主訴：誰も私に「触れたくない」ために早急に歯科治療が必要。
- 患者はホジキンリンパ腫の既往がある。
- 骨髄移植
- 重症筋無力症
- ビスフォスフォネート製剤の静注使用。

Case #178



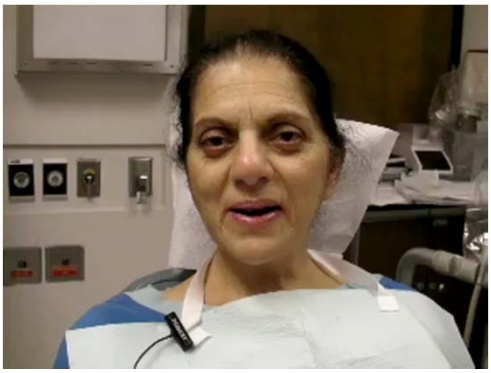


Case #178 Dry Mouth

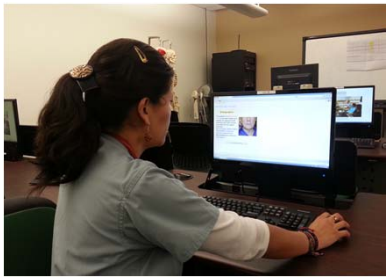


Case #178

Case #178 Patient

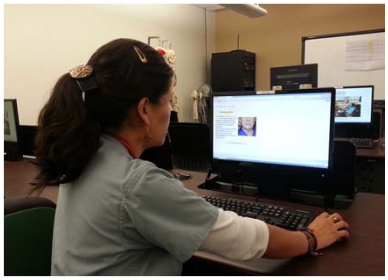


Computer Based Cases



- Self- paced
- Immediate feedback
- Multiple repetitions
- Range of difficulties
- Non-threatening environment

コンピューターベースの症例



- 自分のペース
- 即時のフィードバック
- 複数回繰り返せる
- 難易度の幅
- 怖くない環境

A Controlled Evaluation Of Computer Assisted Training Simulations In Geriatric Dentistry

BACKGROUND:
Compares learning outcomes of a computer-assisted instructional program, developed to simulate the dentist-geriatric patient interaction and to train students in clinical decision making for the geriatric patient. : with traditional approach based on readings from the geriatric dentistry literature.
METHODS: Twenty third-year dental students were matched on grade point average and randomly assigned. They were pre and post-tested using clinical analogue of a geriatric patient prior to using the instructional model.
RESULTS: Students performed similarly at pretest. At post-test, both the computer and literature-based subjects were found to have acquired significantly greater evaluation points, to make fewer errors, and to design more involved treatment plans than at pretest.
CONCLUSION: Comparison of computer and literature-based subjects' performance revealed no significant main or interaction effects regarding type of educational unit used. The computer-based subjects had more positive feelings about the educational unit than the literature-based subjects at a statistically significant level. These findings suggest that the computer program is an effective alternative method for developing clinical decision skills in students treating geriatric patients.

Mulligan, R, Wood, G.. J of Dental Education 57(1):1-9, 1993.

Case #178 Patient

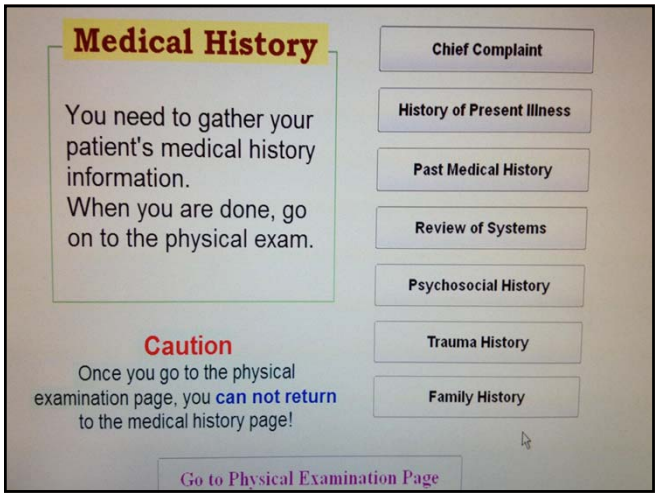
Activities could include: PBL or Group discussion Individual study

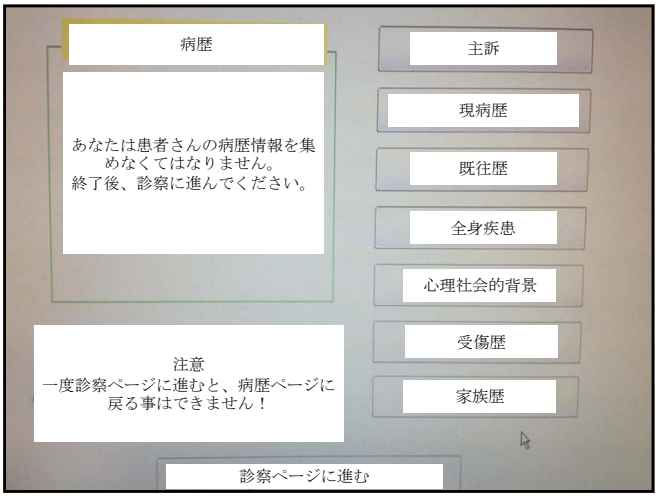
- Case information exercises could be staged around the following questions:
  - What other questions should you ask the patient?
  - What information would you ask from her physican?
  - What treatment modifications are needed prior to dental care?
  - Do you think that complete dentures are the appropriate treatment for this patient?
  - Do you have any concerns about how successful the patient would be in wearing dentures?
  - Do you expect her intra-oral environment to change?
  - What other options are there?

症例#178 患者

行える活動: PBL、グループディスカッション、個別学習

- 症例情報による学習は段階的に以下のような質問を使う事ができる：
  - 他に患者にどのような質問をするべきか？
  - 彼女のかかりつけ医からどのような情報を提供してもらいたいか？
  - 歯科治療を行うに当たって、どのような治療の修正が必要か？
  - 総義歯はこの患者さんに適した治療だと思うか？
  - 患者が義歯をうまく使えるかどうか、何か不安要素はないか？
  - 彼女の口腔内状況が変化する事が想定できるか？
  - 他にどのようなオプションがあるか？





Proposed Dental Treatment Plan

Institute CAMBRA protocol.

Educate the patient and **monitor oral soft and hard tissues** due to potential for dental erosion and mucosal irritation resulting from his GERD.

Tooth #14: Begin endodontic treatment only if symptomatic. Assess if osteoarthritis is interfering with patient's ability to maintain oral hygiene. Consider the use of **electric toothbrush or modified handle grip for the toothbrush**.

Scaling and root planning with a potential for periodontal surgery in the future.

Re-evaluation of root surfaces for caries after calculus removed and tissue recovery.

Teeth # 2, #14, #30 and #31: restorations, including RCT or Ext of #14.

提案された歯科治療

CAMBRAプロトコルの開始

- 逆流性食道炎により歯の酸蝕症や軟組織障害が起こる可能性があるので、口腔の軟組織と硬組織をモニタリングするよう患者に教育する。
- #26: 歯内治療は症状が出た場合のみ開始。骨関節炎が、患者の良い口腔衛生状態を保つための能力の妨げになっていないかを評価する。電動歯ブラシやハンドルグリップが改良された歯ブラシの使用を考慮する。
- スケーリングとルートプレーニング、そして将来的に歯周外科を行う可能性もある。
- 歯石除去と組織治癒後、根面齲蝕の有無を再評価
- #17, #26, #46, #47: 保存修復、#26の歯内療法または抜歯を含む。

The Effectiveness of Case Based Learning in Health Professional Education: A review of CBL in Health Professional Programs

BACKGROUND:
Case-based learning (CBL) is a long established pedagogical method with learning activities commonly based on patient cases. Basic, social and clinical sciences are studied in relation to the case and are integrated with clinical presentations and conditions (including health and ill-health) and student learning is, therefore, associated with real-life situations.

AIM:
To explore, analyse and synthesize the evidence relating to the effectiveness of CBL as a means of achieving defined learning outcomes in health professional prequalification training programs.

METHOD:
We focused the review on CBL for prequalification health professional programs including medicine, dentistry, veterinary science, nursing and midwifery, social care and the allied health professions.

Thistlethwaite JE, et al. Med Teach. 2012;34(6):e421-44.

The Effectiveness of Case Based Learning in Health Professional Education

Results

- The final number of coded papers for inclusion = 104.
- Overwhelmingly, students enjoy CBL and think that it enhances their learning. The empirical data taken as a whole are inconclusive as to the effects on learning compared with other types of activity.
- Teachers enjoy CBL, partly because it engages, and is perceived to motivate, students.
- CBL seems to foster learning in small groups though whether this is the case delivery or the group learning effect is unclear.

Thistlethwaite JE, et al. Med Teach. 2012;34(6):e421-44.

Possible Solutions When There is a Lack of Dental School Clinical Exposures

- **Experiences with Live Patients**
  - **Rotations to sites where population more likely to be affected**
    - **Geriatric Medical Clinics**
    - **Nursing homes**
    - **Pain clinics**

卒前の臨床経験が限られている時に考えられる解決方法

- 実際に患者を診る経験
  - 影響を受けやすい人が多い場所での臨床実習
    - 高齢者医療クリニック
    - 老人ホーム
    - ペインクリニック

Possible Solutions When There is a Lack of Dental School Clinical Exposures

- Rotations to Medical Clinics with Geriatric Patients
  - Don't forget to Flip the Classroom
  - Reading assignments before attending
  - Pre and Post sessions on site

卒前の臨床経験が限られている時に考えられる解決方法

- 高齢患者の多い医療クリニックでの臨床実習
  - クラスルームをひっくり返す事を忘れない事
  - 行く前に資料を読む
  - その場所で、 実習前と後のセッション

Just in Time (JiT) Learning

People have a hard time understanding or remembering information too long before they need to use it or out of context.
Barsalou 1999; Brown et al. 1989; Glenberg and Robertson 1999]

JIT Definition: The acquisition of knowledge or skills at the times when needed rather than in advance.



Clinical Pre-session –Immediate and practical application of knowledge.

Just in Time (JiT) 学習

人々は実際に必要とされるまで、もしくは脈絡外の事に、長期間にわたり情報を理解または覚えておく事に苦しむ
Barsalou 1999; Brown et al. 1989; Glenberg and Robertson 1999]



JIT 定義: 事前ではなく、必要とされた時にその知識または技術を習得する。

臨床プレセッション - 即座で実用的な知識の応用

What Can Be Done for Dry Mouth

- Salivary buffering: toothpastes, bicarbonate rinse or spray
- Palliative products: saliva substitutes
- Medications – cholinergic agonists
- Change causative medications



口腔乾燥症に対して何ができるか

- 唾液の緩衝: 歯磨剤, 重炭酸塩リンスまたはスプレー
- 緩和製品：代行唾液
- 薬剤–アセチルコリン受容体アゴニスト
- 原因薬剤の変更



Behavioral Adjustments for Symptomatic Relief



症状緩和のための行動改変



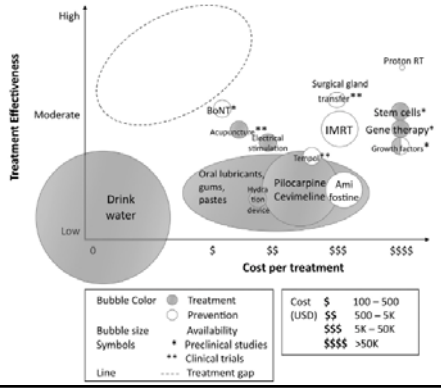
Cost Effective Analysis of Treatment Addressing Xerostomia for H&N Cancer Patients

Abstract

Head and neck (H&N) radiation therapy (RT) can induce irreversible damage to the salivary glands thereby causing long-term xerostomia or dry mouth in 68%-85% of the patients. Not only does xerostomia significantly impair patients' quality-of-life (QOL) but it also has important medical sequelae, incurring high medical and dental costs. In this article, we review various measures to assess xerostomia and evaluate current and emerging solutions to address this condition in H&N cancer patients. These solutions typically seek to accomplish 1 of the 4 objectives: (1) to protect the salivary glands during RT, (2) to stimulate the remaining gland function, (3) to treat the symptoms of xerostomia, or (4) to regenerate the salivary glands. For each treatment, we assess its mechanisms of action, efficacy, safety, clinical utilization, and cost. We conclude that intensity-modulated radiation therapy is both the most widely used prevention approach and the most cost-effective existing solution and we highlight novel and promising techniques on the cost-effectiveness landscape.

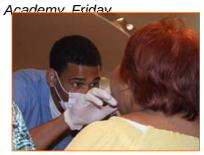
Saspostas LS. et al. Oral Surg Oral Med Oral Path Oral Radiol 2013 Jul 116(1):e37-51.

Treatment Gap Analysis



Just in Time (JiTT) Teaching/Feedback

The JiTT pedagogy blends active learning classroom methods with web-based technologies.
Gregor Novak, Distinguished Scholar in Residence, US Air Force Academy, Friday September 15, 2006

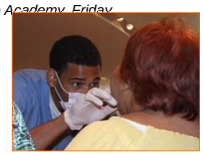


Clinical Post - session

- Reviewing of new learning
- Context
- Positive Reinforcement - Success in application of knowledge.

Just in Time (JiTT) 教育・フィードバック

JiTT 教育法は教室での能動的学習法とウェブベースの技術をブレンドさせたものである。
Gregor Novak, Distinguished Scholar in Residence, US Air Force Academy, Friday September 15, 2006



臨床ポストセッション

- 新しく学習した事の復習
- 脈絡
- 正の強化 - 知識の応用に成功

Prognosis and Treatment of Dry Mouth: A Systematic Review

- Med Clin (Barc). 2013 May 30. pii: S0025-7753(13)00269-8. doi: 10.1016/j.medcli.2013.02.036. [Epub ahead of print]
- López-López J, Jané Salas E, Chimenos Küstner E.
- **Abstract**
- The aim of this paper is a systematic review of the literature of the past 10 years. Of the 29 items tested, 15 were controlled trials, 2 uncontrolled trials, 4 observational studies, 2 systematic reviews and 5 non systematic reviews. The most studied patients were Sjögren's syndrome and the irradiated patients. Treatments are focused on the etiology, prevention, symptomatic, local salivary stimulation and systemic treatments. **It can be concluded that treatment must be individualized, salivary substitutes and mechanical stimulation techniques can be applied.**

Competency Assessment Strategies When Lack of Dental School Clinical Exposures

Traditional Testing	Interactive Methods
• Pen and paper test. • Assesses knowledge • Does not assess competency	• TOSCE (Timed Objective Structured Clinical Exam) • Exams with Standardized Patients • Computer-based Virtual Patient

Traditional

卒前の臨床経験が限られている時のコンピテンシー評価方法

従来通りのテスト	インタラクティブな方法
• 紙とペンのテスト • 知識の評価 • コンピテンシーの評価にはならない	• TOSCE (時間制客観的臨床能力試験) • 模擬患者との試験 • コンピューターベースの仮想患者





The incomplete understanding of the epidemiology, etiology, pathophysiology, and lack of diagnostic criteria are barriers to critical investigation and selection of effective treatments.

Patton LL, et al. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2007 Mar;103 Suppl:S39.e1-13.



疫学、病院、病態、診断基準の欠如に対する不十分な理解は、重要な診査と効果的な治療法選択への障壁である。

Patton LL, et al. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2007 Mar;103 Suppl:S39.e1-13.

Original Question

If DDS students have little (severe dry mouth) to no (BMS) experience diagnosing and managing these complex conditions during their clinical educational programs, how will they become proficient?



元の質問

もし歯学部学生が臨床教育中に、口腔乾燥症と舌痛症の診断およびマネージメントをした経験が少ない又は無いのであれば、彼らはどのように熟達すればよいのだろうか？



Yes! Provided that we:

- **Use more engaging teaching methods requiring active learning!**
- **Provide more case based scenarios (i.e. paper cases, computer cases, PBL cases, virtual cases and standardized patient cases).**
- **Assess competency in addition to knowledge.**



はい！もし我々が：

- **より、能動的学習が求められる学生参加型の教育方法を用いたら！**
- **症例に基づいたシナリオを与えれば (例： 症例を印刷、コンピューター、PBL症例、仮想患者と模擬患者の症例).**
- **知識に加えて、コンピテンシーの評価。**

