How accurate is information about diagnosis and management of TMD’s on dentist websites?

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NO FINANCIAL DISCLOSURES

NO CONFLICTS OF INTEREST
Objectives

- Discuss inaccurate concepts of diagnosis of TMD on dentist websites
- Discuss misconceptions about management of TMD on dentist websites
- Discuss peer-reviewed, evidence-based recommendations for management of TMD
Internet use is ubiquitous
Healthcare information is one of the most frequently sought topics on the internet.

60% of respondents believed that information on the internet was the “same as” or “better than” information provided by doctors.

(Diaz et. al, J Gen Intern Med. 2002)
Open access healthcare information websites have been “graded”

- Evaluation of online consumer medication information (Kim et. al, Research in Social and Administrative Pharmacology, 2011)

<table>
<thead>
<tr>
<th>Keystone action plan criteria</th>
<th>Points¹</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Component</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Name and brand name included in the information</td>
<td>(-2 points if incorrect)</td>
</tr>
<tr>
<td>2</td>
<td>Prominent display of any black box warnings that are relevant to the consumer</td>
<td>(-2 points if incorrect)</td>
</tr>
<tr>
<td>3</td>
<td>Section that identifies an indication for use</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Statement of contraindications</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Statement of what to do if the contraindication applies (i.e., talk to your health care professional before taking this medication if any of these apply to you)</td>
<td>(-2 points if incorrect)</td>
</tr>
<tr>
<td>6</td>
<td>Statements of precautions including the following:</td>
<td>(-2 points if incorrect)</td>
</tr>
<tr>
<td></td>
<td>1. Activities, drugs, food, or other substances to be avoided</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Risk to mother and fetus or infant when used in pregnancy labor and breast feeding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Specific hazards to the pediatric population, if applicable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Additional precautions that apply to the safe and effective use of the medicine in identifiable patient populations</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Possible adverse reactions</td>
<td>(-2 points if incorrect)</td>
</tr>
<tr>
<td>8</td>
<td>Risks, if any, to the patient developing a tolerance to or dependence on the drug product</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Information of the proper use of the medicine, including usual dosing instructions and the following:</td>
<td>(-2 points if incorrect)</td>
</tr>
<tr>
<td></td>
<td>1. Statement stressing the importance of adhering to the dosing instructions prescribed by your health care provider</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Statement of what the patient should do if doses are missed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Special instructions on how to administer (i.e., with food)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Statement on what to do in case of overdose of the medicine</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Proper storage instructions</td>
<td></td>
</tr>
</tbody>
</table>
Is all healthcare information on the internet believable?
Anti-Vaccine Scientific Support Arsenal

Scientific proof the media won't tell you about

Vaccines DO Cause Autism—Undeniable Scientific Proof

There is absolutely undeniable scientific proof that vaccines cause autism. There is no question! Case closed! Game over!

The people and the mainstream media who claim that the vaccine autism link has been thoroughly debunked are all bought and paid for by the vaccine industry. They are lying and being paid to do it! And anyone who speaks against them gets royally defamed and defaced by the vaccine industry controlled media.

Andrew Wakefield’s colleague who co-authored the MMRI study that linked the MMR vaccine to autism, has been exonerated and his studies have been confirmed.

“Justice Mitting reviewing Dr. Wakefield’s appeal in the High Court of Justice, Queen’s Bench Division, Administrative Court, found that the GMC’s conclusions were "based on inadequate and superficial reasoning" and that "the finding of serious professional misconduct and the sanction of erasure are both quashed." See full text of the decision [http://www.bailii.org/ew/cases/EWHC/Admin/2012/503.html]

Dr. Wakefield’s professional insurance coverage paid for his appeal; Dr. Wakefield’s insurance carrier would not.

Dr. Wakefield has recently filed a defamation lawsuit in Texas against the British Medical Journal, Dr. Fiona Godlee, Editor-in-Chief, and journalist Brian Deer, who instigated the GMC prosecution. His lawsuit alleges that the defendants knowingly or recklessly engaged in fraudulent misrepresentations about 1998 Lancet study. While far from decisive, the Mitting ruling bodes well for Dr. Wakefield’s defamation action. *Read more here [http://vaccinesnewsdaily.com/2012/02/09/dissidents-call-for-dismissal-of-lancet-1998-autism-study-experts-on-charges-of-professional-misconduct/]

A CDC whistleblower recently admitted that he was forced to withhold vital information from the CDC’s findings on autism.

CDC whistleblower admits that the MMRI causes autism [http://youtu.be/qf7DnN5sRMI]

Furthermore, there are literally hundreds of independent studies that prove vaccines cause autism. Here are some links to studies that are undeniable. Pro-vaxer’s eyes seem to gloss over as they see all this proof and they start criticizing the source and everything to keep from seeing the truth! WAKE UP! Vaccines DO cause autism!

1. Empirical Data Confirm Autism Symptoms Related to Aluminum and Acetaminophen Exposure


3. MMRI antibodies are significantly higher in autistic children as compared to normal children, supporting a role of MMRI in autism.
### Measles cases and outbreaks

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>63</td>
</tr>
<tr>
<td>2011</td>
<td>220</td>
</tr>
<tr>
<td>2012</td>
<td>55</td>
</tr>
<tr>
<td>2013</td>
<td>187</td>
</tr>
<tr>
<td>2014</td>
<td>667</td>
</tr>
<tr>
<td>2015</td>
<td>189</td>
</tr>
<tr>
<td>2016</td>
<td>54</td>
</tr>
</tbody>
</table>

[www.cdc.gov/measles/cases-outbreaks.html](http://www.cdc.gov/measles/cases-outbreaks.html)
Holistic “science”

GOING GLUTEN FREE: THE CHOICE THAT SAVED MY LIFE

May 23, 2015 | Lindsi Cagan | Leave a comment

How Going Gluten Free Has Changed My Life

Why did I start this blog? Well … two reasons. Firstly, I am a

This is the dear friend that opened my eyes to my health crisis. Nicaragua, 2014…we know how to have a good time.

For gluten free beers.com going gluten free-the-choice-that-saved-my-life
Pseudoscience in dentistry

DENTAL FILLINGS: A SURPRISING RISK FACTOR FOR CANCER

Today I am going to tell you about a potential risk factor for cancer that will most likely surprise you—dental fillings!

The Dangers of Silver Amalgam Fillings

Silver amalgam fillings are the type of dental fillings most commonly used in the United States. Despite their name, such fillings actually contain 50% mercury and only 25% silver. Most people who have such fillings in their mouths are unaware that they contain mercury. In fact, a conducted by Zogby International in 2006 found that 72% of respondents did not know that mercury was a main component of dental amalgams, and 92% of respondents said they wanted to be told about mercury in dental amalgam before receiving it as a filling. However, dentists who use silver amalgams often do not inform their patients that they contain mercury.

Mercury is a highly toxic heavy metal, and its dangers have been known for centuries. You may recall the Mad Hatter, from Alice in Wonderland. In England of old, there really were “mad hatters.” This was the name given to hat makers of the time, many of whom were considered to be quite mad. In actuality, they suffered from mental illnesses caused by their regular exposure to mercury, which they used for treating the fur that was common to hats in those days. As a result, the phrase “mad as a hatter” began to be used to describe anyone who exhibited similar mental traits.

Fortunately the use of mercury to treat fur no longer exists. But the same cannot be said of other industries, including medicine (mercury in the form of thimerosal is still used in certain vaccines and has been linked to a sharp rise in the incidence of autism) and, as mentioned, dentistry.

By some estimates, as many as 100 million amalgam fillings containing mercury are placed in the mouths of dental patients in the U.S. each year.

Despite outcries from health experts over the last two decades calling for an end to the use of amalgam fillings, the American Dental Association (ADA) has steadfastly refused to do so. Instead, the ADA insists that silver amalgam fillings are safe, and it continues to harass dentists who speak out against such fillings. According to a Boston College Law School study, the ADA has even gone so far as to forbid dentists from suggesting mercury removal and threatening them with the suspension of their license to practice dentistry if they do so.

Science confirms the root canal – cancer connection

Bill Henderson is the author of the book “Cure Your Cancer” and host of the popular radio show “How to Live Cancer-Free.” After 25 years as a cancer-prevention advocate speaking with thousands of cancer patients and doctors on and off the air, he says: “Two facts have jumped out at me from those many phone calls... 1) The most common cause of all cancers is root canal-filled teeth and cavitation teeth and 2) Until a cancer patient gets rid of the root canal-filled teeth and cavitations, they don’t get well. You can take these two facts to the bank, folks.”

Science is beginning to agree with Henderson’s claim. Dr. Robert Brown, looked directly at the relationship...
Pseudoscience in Oral medicine

- Chronic Lyme disease
- "Natural" products to alleviate oral mucosal diseases
- Concepts of TMD and burning mouth syndrome
- Misdiagnosis of "autoimmune disease"

- Misinformation is usually patient-centric, and freely disbursed through the internet
But what about faulty science perpetrated by dental professionals themselves?

How accurate is information about diagnosis and management of temporomandibular disorders on dentist websites?

Bhavik Desai, DMD, PhD, Naser Alkandari, DDS, and Daniel M. Laskin, DDS, MS
In a survey of 200 patients attending a university pain center, half the respondents used the Internet for medical information.

39% had searched for specific information about chronic pain.

(De Boer et. Al, Patient Educ Couns. 2007)
Much of patient information on the internet is part of medical marketing, so how accurate is the information being provided?

Inaccurate information is of particular concern in management of TMD’s where there is considerable controversy about diagnosis and specific treatments. (Jerjes et. Al, Int Arch Med. 2008)
Inspiration for this study

Quality and content of dental practice websites

L. C. Nichols¹ and D. Hassall²

IN BRIEF
- Many members of staff did not know if their practice had a website or what the website address was.
- Items of essential information were frequently absent.
- Tooth whitening was promoted on 89% of websites despite legality issues.
- Many websites advertised Botox injections despite the illegality of advertising prescription-only medications.

DOI: 10.1038/sj.bdj.2011.242
*British Dental Journal 2011; 210: E11
Evaluating healthcare websites

- https://nnlm.gov/outreach/consumer/evalsite.html
- Accuracy
- Authority
- Bias/Objectivity
- Currency/Timeliness
- Coverage
Study design

- The purpose of this study was to analyze the content of dental practice websites for the accuracy of various aspects of information they provide and their advertisement about treatments for TMD’s.
- Google search
- TMD specialist in (State)
- First five dental providers selected
- Exclusions: Non-dental providers, academic centers
Google search algorithm

https://www.google.com/insidesearch/howsearchworks/thestory/
Questions asked

- Is the provider a general dentist or an ADA-recognized specialist?

- Was there mention of problems such as malocclusion, jaw misalignment or bad bite as the etiology of TMD?

- In the information provided, is TMD considered a single disorder or separated into different categories (myofasical pain, bone pathology, disc pathology etc.)

- Was addressing occlusal problems or malocclusion recommended as a treatment option for the management of TMDs?
255 websites evaluated
50 states + D.C.
39 out of 173 general dentists on the sample described themselves as neuromuscular dentists.

“Neuromuscular” dentistry is controversial

Phase 1 advocates conservative management of TMD – massage/exercise/PT/orthotic

Phase 2 advocates irreversible dental treatments geared towards malocclusion

$$$
Q: Are TMD’s caused by occlusal problems?

<table>
<thead>
<tr>
<th>Practice designation</th>
<th>Occlusal problems not linked to etiology of TMDs</th>
<th>Occlusal problems linked to etiology of TMDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>General dentist</td>
<td>Count: 59</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td>% within specialty: 34.1%</td>
<td>65.9%</td>
</tr>
<tr>
<td>Oral and maxillofacial</td>
<td>Count: 16</td>
<td>35</td>
</tr>
<tr>
<td>surgeon</td>
<td>% within specialty: 31.4%</td>
<td>68.6%</td>
</tr>
<tr>
<td>Orthodontist</td>
<td>Count: 2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>% within specialty: 15.4%</td>
<td>84.6%</td>
</tr>
<tr>
<td>Prosthodontist</td>
<td>Count: 0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>% within specialty: 0%</td>
<td>100%</td>
</tr>
<tr>
<td>Other</td>
<td>Count: 8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>% within specialty: 61.5%</td>
<td>38.5%</td>
</tr>
</tbody>
</table>

Fisher’s exact test.  
*P* = .069 (Not statistically significant at the .05 significance level).
Are TMD’s caused by occlusal problems?

- Area of controversy
- For decades dental education has posited occlusal problems as the etiology of TMD
- American Academy of Orofacial Pain vs Craniomandibular Pain
- ADA/Evidence based literature vs neuromuscular literature
Controversy...

- Short answer: No
- Other implications: legal, ethical, $
LETTERS TO THE EDITOR

Drs. Greene and Obrez’s article inaccurate

C.S. Greene continues his biased accusations
Are TMD’s referred to as a single disease? (versus a heterogeneous group of disorders)

<table>
<thead>
<tr>
<th>Practice designation</th>
<th>TMDs labeled as a single disorder</th>
<th>TMDs not labeled as a single disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>General dentists</td>
<td>60</td>
<td>113</td>
</tr>
<tr>
<td>Oral and maxillofacial surgeons</td>
<td>29</td>
<td>22</td>
</tr>
</tbody>
</table>

Fisher’s exact test. 
P = .004 (Statistically significant at the .05 significance level).
Should TMD’s be treated by addressing malocclusion?

Table III. Number of practitioners by practice designation whose websites recommended treatment of occlusal problems to manage the problem

<table>
<thead>
<tr>
<th>Practice designation</th>
<th>Recommended correction of an occlusal problem to treat TMDs</th>
<th>Did not recommend correction of an occlusal problem to treat TMDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>General dentists</td>
<td>91</td>
<td>82</td>
</tr>
<tr>
<td>Oral and maxillofacial surgeons</td>
<td>32</td>
<td>19</td>
</tr>
</tbody>
</table>

Fisher’s exact test.  
$P = 0.201$ (Not statistically significant at the .05 significance level).
DISCUSSION

- Heterogeneity of TMD's
- Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) for Clinical and Research Applications: Recommendations of the International RDC/TMD Consortium Network* and Orofacial Pain Special Interest Group
- Myalgia, disc disorders, joint disorders, headaches etc...
Occlusal problems and TMD’s

- Scant evidence correlating the two
  (Manfredini et al., Quintessence Int. 2015)

Irreversible treatments such as occlusal equilibration, orthodontics, prosthodontics, and orthognathic surgery cannot be defended as medically necessary.

(Klasser and Greene, J Can Dent Assoc, 2009)
(Greene and Orbež, OOOO, 2015)
Medical model for diagnosis and treatment

Raises questions about imaging modalities

Advocates bio-psychosocial treatment modalities for TMD

Use of conservative, reversible, minimally invasive treatments

Advices against irreversible, aggressive (occlusal) therapies.
“Dentists should be prepared to encounter many patients with temporomandibular disorder with an incorrect understanding about temporomandibular disorders as a result of their searching the Internet for current information. This will affect the interactions between dentists and those patients.”
Questions?
Future studies...