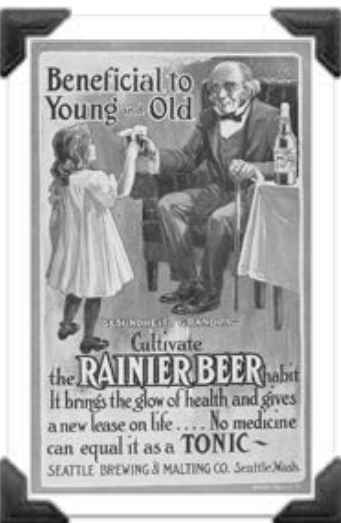


Media, marketing, moisturizers, medications, medical shows and a machination of the mind

Evidence and stories behind the Dr. Oz Show, anti-aging creams, medical news

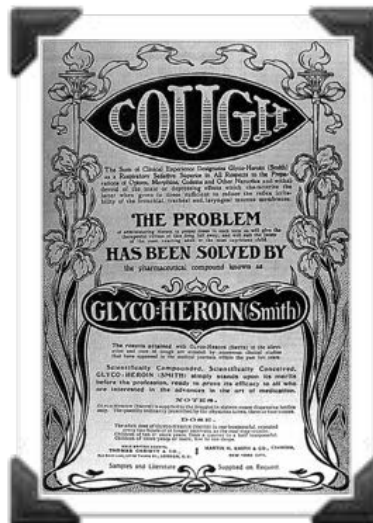
James
McCormack
BSc(Pharm), Pharm D
Faculty of
Pharmaceutical
Sciences
UBC



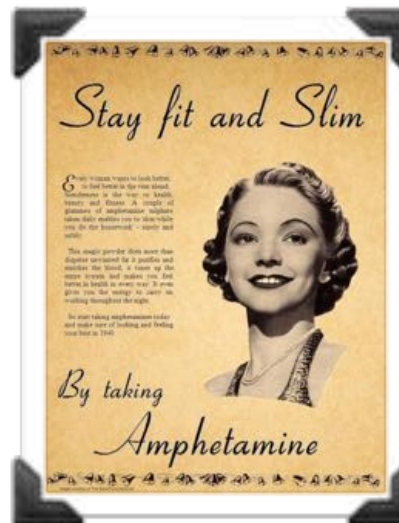
Beer
for children



Barbiturates
for mothers



Heroin
for cough



Amphetamines
for weight loss

These are actual ads



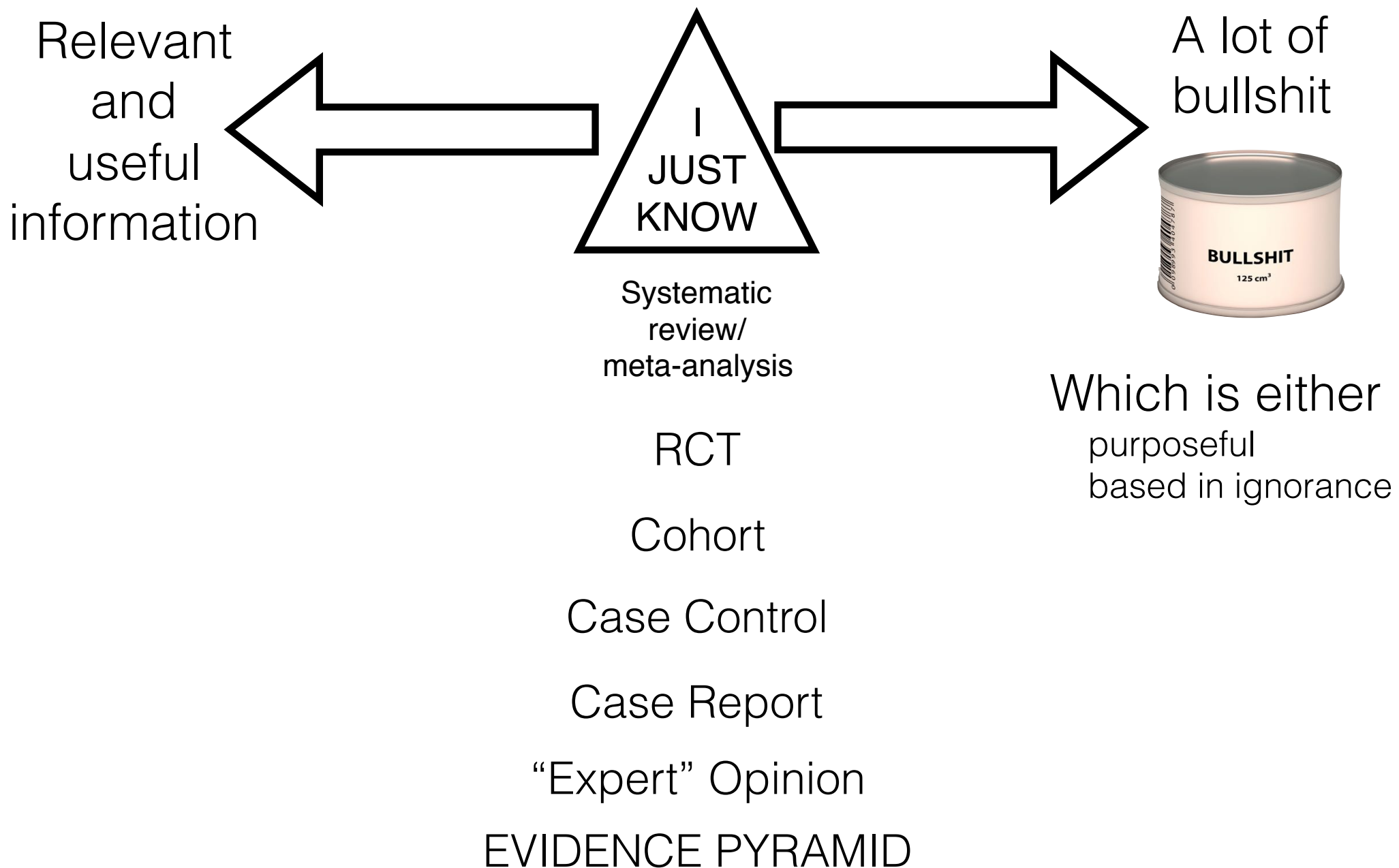


talk about my experience with looking at and interacting with the media when it comes to the dissemination/examination of evidence

suggest that **WE** are much of the cause of the problem

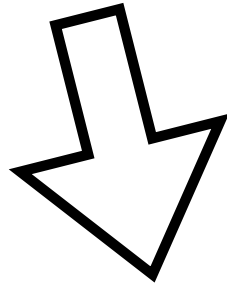
talk about moisturizers and the evidence

discuss what we should do

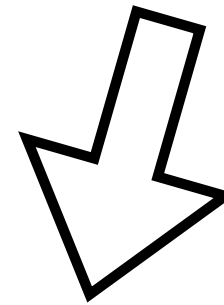


Need different evidence for different questions

Relevant and
useful
information



A lot of
bullshit



How does a newsroom work?

NEWSROOM HIERARCHY

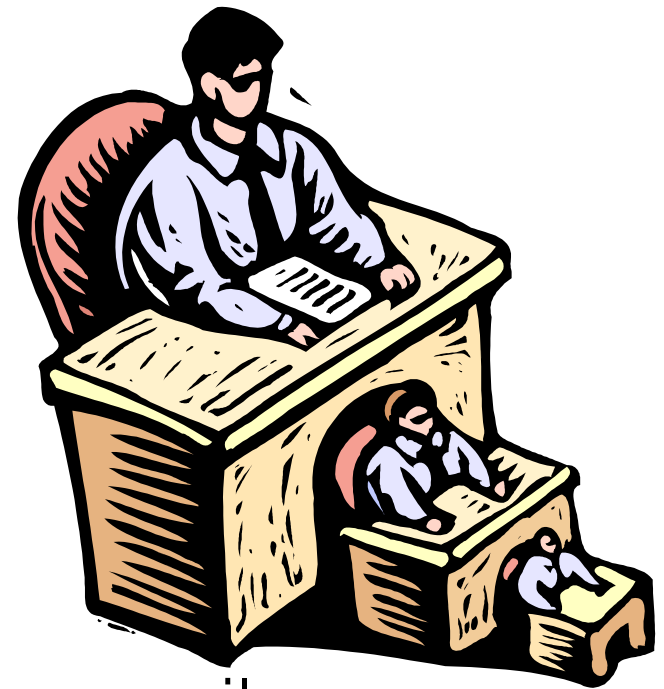
Managing editor

City editor

Assignment editor

Beat Reporter

General Reporter



Medical/science reporters don't necessarily
have a medical or science background

General reporter says....

“I have to file at 5:00pm. Maybe I didn’t get the assignment until 10:00. Maybe I didn’t figure out what the story was and what it needed until 12:00. So I have maybe three hours to get the expert. If the expert calls me back the next day, it doesn’t matter. The story’s gone to bed.”

Waddell et al. 2005

Drugs in the News

How well do Canadian newspapers report the good, the bad and the ugly of new prescription drugs?

by Alan Cassels, Merrilee Atina Hughes, Carol Cole,
Barbara Mintzes, Joel Lexchin and James McCormack

April 2003



Canadian Centre for Policy Alternatives



Drugs in the news: an analysis of Canadian newspaper coverage of new prescription drugs

Alan Cassels, Merrilee A. Hughes, Carol Cole, Barbara Mintzes, Joel Lexchin,
James P. McCormack

193 articles - 5 selected “new” drugs

100% - mentioned at least one benefit

2/3 - made no mention of possible side effects or harms

1/4 - of mentions of drug benefits and harms presented quantitative information

2/3 - of the articles gave no quantification of the benefits or harms

1/20 - mentioned contraindications - 1/3 mentioned drug costs

After exclusion of industry and government spokespeople, for only 3% was there any mention of potential COI

Scorecards we developed to evaluate medical media. Does the story...

Adequately discuss costs?

Quantify potential benefits?

Quantify potential harms?

Evaluate quality of the evidence?

Avoid disease-mongering?

Establish true novelty of the idea?

Establish true availability of the idea?

Use independent sources & identify COI?

Compare the new idea with existing options?

Appear to rely on a news release?



Slow down, NIH & news media
...on SPRINT blood pressure study hype.

THE CULT OF
SURROGATE
OUTCOMES



Idolatry of the Surrogate

New podcast: Dr. John S. Yudkin on diabetes
overdiagnosis



Really? 1/2 of us have diabetes/pre-diabetes?

What does that mean? Hear another side to the
story

<http://www.healthnewsreview.org>

Making decisions is tricky even
when you have most of the pieces

Preferences



Values

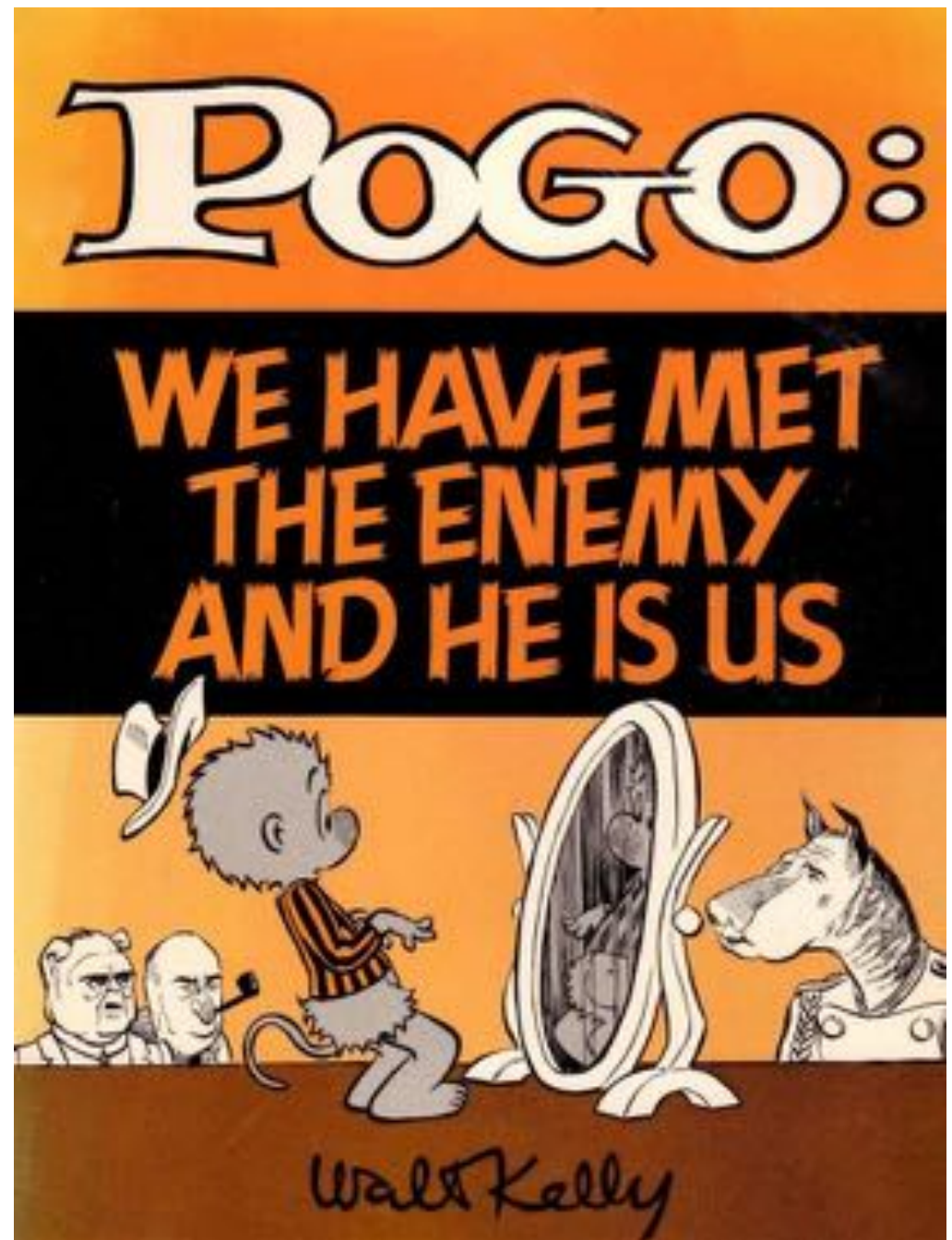
Context

It's simple, just ignore media reports...but

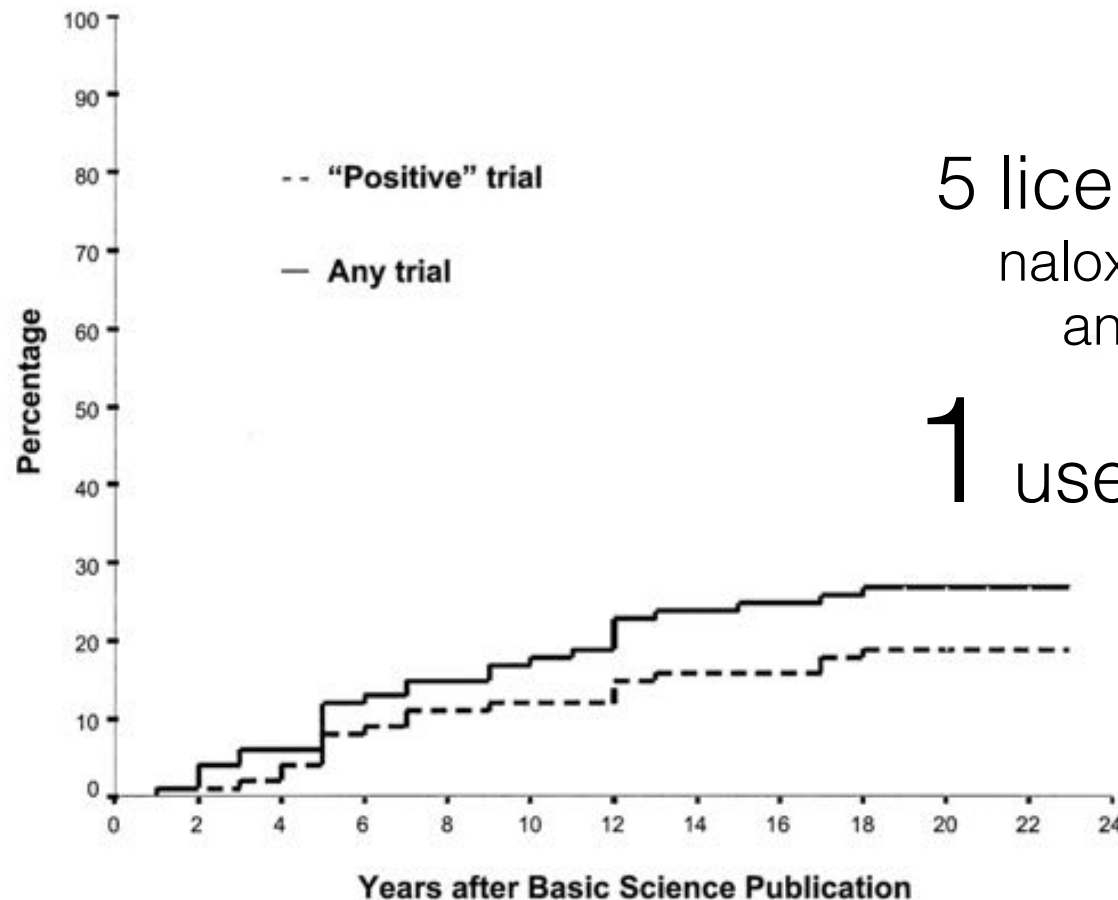
“90% of the general public gets most of its
information about science from the mass media”

“press releases are a major source of
information for 1/3 of medical reports in US
Newspapers”

THE EASY EXPLANATION



101 articles, published between 1979 and 1983
in six major basic science journals, which clearly
stated that the technology studied had
novel therapeutic or preventive promises



5 licensed for clinical use
naloxone, pergolide, alpha-1
antitrypsin, interleukin 2

1 used extensively - ACEI

Am J Med 2003;114:477-84

Misrepresentation of Randomized Controlled Trials in Press Releases and News Coverage: A Cohort Study

spin = specific reporting (intentional or unintentional) that emphasizes the beneficial effect of the experimental treatment

at least one kind of spin - primarily no acknowledgement of non statistically significant primary outcome, focus on within group comparisons, suggesting a p value >0.05 demonstrates equivalence

40% of the study abstracts - So this Starts the Process

47% of press releases

31% of press releases misinterpreted the results - 86% overestimated effect

The association between exaggeration in health related science news and academic press releases: retrospective observational study

Press releases (n=462) on biomedical and health-related science issued by 20 leading UK universities



“Although it is common to blame media outlets - our principle findings were that most of the inflation detected in our study did not occur de novo in the media but was already present in the text of the press releases produced by academics and their establishments”

”most of the responsibility for exaggeration must lie with the scientific authors”

Press Releases by Academic Medical Centers: Not So Academic?

200 press releases

44% - animal/laboratory research

74% explicitly claimed relevance to human health

90% lacked caveats about extrapolation

48% - primary human research

23% omitted study size

34% failed to quantify the results

Seeing what you want to see in randomised controlled trials: versions and perversions of UKPDS data

James McCormack, Trisha Greenhalgh *BMJ* 2000;320:1720-3

Summary points

Randomised trials are subject to interpretation bias as shown by the example of the UK prospective diabetes study

The UK prospective study showed a benefit on macrovascular morbidity with type 2 diabetes treated with chlorpropamide, glibenclamide, or insulin over 10 years compared with dietary advice only. The study shows that intensive glucose control in patients with type 2 diabetes is beneficial independent of initial glucose concentration.

Nevertheless, many authors, journal editors, and the wider scientific community interpreted the study as providing evidence of the benefit of intensive glucose control.

Journal editors should be aware of this important potential bias and encourage authors to present their results initially with a minimum of discussion so as to invite a range of comments and perspectives from readers.

Table 1 Effect of 10 years' treatment with chlorpropamide, glibenclamide, or insulin on patients with newly diagnosed type 2 diabetes

	Any diabetes related end points* (%)	Microvascular disease (%)	Individual macrovascular disease end points†	Median haemoglobin A _{1c} (%)
Dietary advice plus metformin	28.7†	8.2*	14.6†	7.4
Dietary advice plus chlorpropamide, glibenclamide, or insulin	36.8	10.8	20.0	7.8
Dietary advice only	38.9	13.4	21.7	8.0
Relative risk reduction (metformin v dietary advice)	26.2	36.8	32.7	44.4§
Absolute risk reduction (metformin v dietary advice)	10.2	5.2	7.1	2.8§
No needed to treat for 10 years to prevent one event (metformin v dietary advice)	10	19	14	36§

Nevertheless, many authors, journal editors, and the wider scientific community interpreted the study as providing evidence of the benefit of intensive glucose control

	points (%)	diabetes (%)	stroke (%)	myocardial infarction (%)	death (%)	disease (%)	median haemoglobin A _{1c} (%)
Dietary advice plus metformin	28.7†	8.2*	14.6†	11.4*	3.5†	7.0	7.4
Dietary advice plus chlorpropamide, glibenclamide, or insulin	36.8	10.8	20.0	14.6	6.3	7.8	All similar to metformin
Dietary advice only	38.9	13.4	21.7	17.8	5.8	9.2	8.0
Relative risk reduction (metformin v dietary advice)	26.2	36.8	32.7	36.0	44.4§	NS	Significantly lower for all drugs compared with dietary advice
Absolute risk reduction (metformin v dietary advice)	10.2	5.2	7.1	6.4	2.8§	NS	
No needed to treat for 10 years to prevent one event (metformin v dietary advice)	10	19	14	16	36§	NS	

“We believe that these cases illustrate the principle that interpretations of clinical trial results are often neither objective nor value-free. Rather, researchers, authors, and editors are highly susceptible to interpretive biases”

“We’ve shown something here” bias

“The result we’ve all been waiting for” bias

“Just keep taking the tablets” bias

“What the hell can we tell the public?” bias

“If enough people say it, it becomes true” bias



Ever wonder
if the
recommendations
from these shows
are evidence-based?



WE DID

Televised medical talk shows—
what they recommend and the evidence to support
their recommendations: a prospective observational study

Korownyk C, Kolber MR, McCormack J, Lam V, Overbo K, Cotton C, Finley
C, Turgeon RD, Garrison S, Lindblad AJ, Banh HL, Campbell-Scherer D,
Vandermeer B, Allan GM

Brit Med J 2014;349:g7346 doi: 10.1136/bmj.g7346

Published 17 December 2014

Televised medical talk shows—what they recommend and the evidence to support their recommendations: a prospective observational study

	No (%) of recommendations	
	<i>The Dr Oz Show (n=479)</i>	<i>The Doctors (n=445)</i>
Benefit of recommendation mentioned	453 (94.6)	402 (90.3)
Benefit was specific	204 (42.6)	184 (41.3)
Magnitude of benefit mentioned	79 (16.5)	49 (11.0)
Possible harms mentioned	47 (9.8)	34 (7.6)
Cost mentioned	60 (12.5)	14 (3.1)
Potential conflict of interest declared or mentioned	1 time	3 times

Making decisions is tricky



when you are missing
a lot of the pieces

“Believable” Evidence for Recommendations

The Dr Oz Show

evidence supported 46%

contradicted 15%

not found for 39%

believable/somewhat believable evidence 33%

The Doctors

evidence supported 63%

contradicted 14%

not found for 24%

believable/somewhat believable evidence supported 53%



Saturday Feb 25, 2006 - Vancouver Sun

Publication: Vancouver Sun, Date: Feb 25, 2006, Section: Front Page, Page: 1

Is this cold remedy really 'a beauty'?

Product pitchman Don Cherry and word of mouth have helped make it Canada's most popular cold remedy. Thousands swear by it. They claim COLD-FX prevents colds or alleviates symptoms.



The Sun asked independent experts to look at the scientific research behind the claims. The results may surprise you.



SPECIAL REPORT IN OBSERVER, C1-3

Another good example



Dec 2014



ENDOCRINOLOGY 12.21.2014

The Slippery Slope: A Bittersweet Diabetes Economy



By John Fauber, Elbert Chu, and Goulier Jones

POPULAR IN

OBESITY
Many Insured
Loss Drugs

GENERAL EN
Whole Grain:

GENERAL EN
Reclast May I
Reversing Ma



ENDOCRINOLOGY 12.22.2014

The Slippery Slope: Adverse Events and Runaway Diabetes Train

— 'Theres gotta be something better than approving drugs based on a lab test and then losing track of them.'



By Elbert Chu, Goulier Jones, and John Fauber

POPULAR IN YOUR SPECIALTY

GENERAL ENDOCRINOLOGY
Whole Grains Diminish Death

GENERAL ENDOCRINOLOGY
Reclast May Protect Bone by
Reversing Marrow Fat

TYPE 2 DIABETES
Tight Control Lowers Death in
Diabetes

“from 2004 to 2013, none of the 30 new diabetes drugs that came on the market were proven to improve key outcomes, such as reducing heart attacks or strokes, blindness or other complications of the disease”

<http://www.medpagetoday.com/PublicHealthPolicy/FDAGeneral/49196>

Change Gears



Lots of similarities

Moisturizers



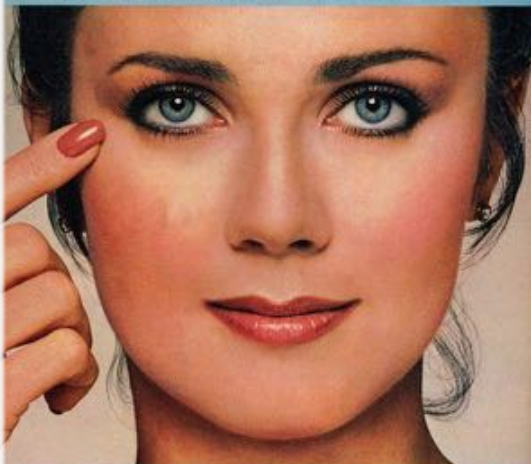
**USE CREAM
THAT'S CHEAPER**

(A Parody of Don't Fear The Reaper by Blue Oyster Cult)

It starts with the perfect serum,
eye treatment, and moisturizer.

Le Common Sense Companies

This is where a wrinkle could start....



This is what could stop it.

I'm Lynda Carter. And I don't want wrinkles any more than you do. That's why I use Moisture Whip Moisturizer by Maybelline. Because unlike the leading moisturizers, Moisture Whip contains Padimate O, a protective ingredient that screens out harmful light rays that cause our skin to age and wrinkle before its time.

Moisture Whip is also dermatologist tested and fragrance free. So use Moisture Whip every day and do more than moisturize your face. Help protect it from wrinkles. I do.

Moisture Whip Maybelline



ClickAmerica.com

Don't let *Dry Skin* lines make you look tired and faded



Even before 25—a woman's skin begins to lose its natural softening oils. Dry lines and a lathery parched look begin to age her face.

But replace the natural oils of your skin with the cream that's rich in homogenized lanolin... and your face keeps its soft, dry young look!

Dry skin drinks up this cream's homogenized lanolin

It can happen at 19 or 20—the tired, faded look that comes from "paper-dry" skin. So probably that you may hardly notice, dry lines creep into dry skin's fold. The skin on your cheeks gets chapped... dry-shedded... even looks cracked, dull, older.

Don't let dry skin lines add years to your face. Start tonight to smooth them away with Pond's Dry Skin Cream. It's extra rich in lanolin that's homogenized to soften deeper. Pond's Dry Skin Cream is an effective skin cream. Use it often, any other dry skin cream.

EXTRA lanolin richness—You can tell Pond's Dry Skin Cream is extra rich in

lanolin by its feel. It has a velvety "soft" body you can really count on. And you can see one parched skin literally drink up the extra richness of this homogenized lanolin.

Deeper penetration—Pond's Dry Skin Cream is homogenized—refined—so its lanolin can quickly penetrate the skin surface. Lovely Mrs. William Rhinlander Stewart says, "I think if any cream can match the almost instantaneous way it sinks right in."

Tonight—use your skin look smoother, younger, after just one Pond's Dry Skin Cream.

The big price is a whole woman's protection from dry skin—costs less than a dollar!



How homogenizing increases the lanolin benefits of Pond's Dry Skin Cream. To homogenized cream has some glands which surface skin has difficulty absorbing. Homogenized Pond's Dry Skin Cream has a fine, even texture. Because in lanolin is homogenized, you can see the skin's texture change.



Rich in lanolin. Lanolin richness you can feel. In its velvety "soft" body that makes dry skin soft. To correct dry skin patches, use dry paper absorbent. Pond's Dry Skin Cream, by itself, does not remove dry patches.



To correct dry skin patches, use dry paper absorbent. Pond's Dry Skin Cream, by itself, does not remove dry patches.

See Good Housekeeping's Advertising Gallery—Page 6

I LOVE MY HUSBAND FAR TOO MUCH

TO RISK GETTING DRY, LIFELESS "MIDDLE-AGE" SKIN!

HOW YOU, TOO, CAN KEEP YOUR COMPLEXION LOVELY WITH THIS SOAP MADE WITH OLIVE OIL!



LINES SAY "over 30!"



A Sign that UNDER TISSUES are Shrinkages!

The first time I used Skin Principle I could actually see an improvement. But you will too. I know you don't have time for a complicated skin ritual. I don't. But if you'll just take 30 seconds to smooth on Skin Principle at night and again in the morning, you can start your skin looking and acting younger. Really. Skin Principle moisture lotion goes to work quickly, with collagen protein for smoothing, natural moisturizers for softening. Special ingredients that actually let skin breathe. Continued use will help make your skin look and act younger than it has in years. And Skin Principle leaves out what your skin doesn't want. So it's hypoallergenic and fragrance free. If you'd like more skin care made simple, you'll love Skin Principle. Or my name isn't Judy Smith.



SKIN PRINCIPLE by MAXFACTOR
Serious Skin Care Made Simple.



HOW DARE YOU!

Moisturizer choice is VERY personal

You just don't understand - the ONE I use is "different"

Aren't I worth an expensive cream?

You're just a guy trying to support all the men who wonder what the !@#\$ is up with all these creams

Deception in cosmetics advertising: Examining cosmetics advertising claims in fashion magazine ads

289 ads

variety of claims - superiority, scientific,
performance, subjective

OVERALL

Vague 42%

Omission 17%

False 23%

Acceptable 18%

J Glob Fas Mark 2015;6:194-206

“Preservation of a youthful complexion has been the goal of aging humans for thousands of years”

Ann Intern Med 2013;158:781-90



AGE and SUN

Most (90%+) changes associated with skin aging are due to photoaging from sun exposure and chronologic aging



VOGUE



- FDA has no authority to require companies to test cosmetic products for safety
- most cosmetic marketing claims are unregulated, and companies are rarely, if ever, required to back them up, even for children's products
- companies are allowed to leave some chemical ingredients off product labels
- “Fragrance” may include any number of the industry's 3,100 stock chemicals
- FDA does not have the resources or authority for pre-market approval of cosmetic product labelling

Unregulated terms

These terms can
mean
ANYTHING
or
NOTHING
AT ALL

Dermatologist recommended
Clinically proven
Hypoallergenic
Non-comedogenic
Alcohol-free
24-hour anything
Non-irritating
Repairing
Detoxifying
Contouring
Healing
Dermatologist tested
Dermatologist approved
Proven formula
Chemical free

Cosmetic Myths

creams designed for different body parts

expensive creams

hydrating serums

age reversing products

toners

body-firming products

sunscreen > 50 SPF

facial masks

Charged with deceptive advertising

L'Oreal claimed their products targeted users' genes



DERMAdoctor claimed their product captured UV light and transformed it into visible red light



FEDERAL TRADE COMMISSION
PROTECTING AMERICA'S CONSUMERS

Photoshopped Ads



L'ORÉAL
PARIS
PROFESSIONNEL



MAYBELLINE
NEW YORK



April 2012

7 creams studied

**Garnier, L'Oreal Paris, Lancome Paris,
Olay, Aveeno, Neutrogena**

*"After 6 weeks ...
no product
was even slightly
better than the rest,
including the control."*



August 2009

13 products studied

**Nivea, L'Oreal, Simple Kind to Skin, Olay,
Dr Brandt, Logona, Clarins, Clinique,
StriVectin, Garnier, Boots, Avon, RoC**

*"Simple moisturiser
worked just as
well as more
expensive creams"*



Retin-A
Avita
Altinac
Tretin-X
Refissa
Renova
Stieva-A
Airol
Atralin

“Topical tretinoin
[Retin-A and others]
is considered
the **GOLD** standard
to treat photoaged skin”

Journal of Cosmetic Dermatology 2015;14:40-6

Tretinoin overall

(looking at just the doses that worked >0.01%)

APPLYING TO FACE FOR 6 MONTHS	People using CREAM with TRETINOIN	People using CREAM ALONE	THE ACTUAL DIFFERENCE
% OF PEOPLE IMPROVED			
Investigator's assessment	75%	40%	35%
Patient's assessment	85%	60%	25%
Fine wrinkles	65%	35%	30%
Coarse wrinkles	45%	25%	20%
Uneven skin discolouration	70%	45%	25%
% OF PEOPLE HARMED			
Redness	30%	5%	25%
Scaling/dryness	55%	20%	35%
Burning/stinging	30%	10%	20%

ADAPTATION OF DATA FROM A COCHRANE REVIEW - NUMBERS ROUNDED OFF

Wrinkles are
typically evaluated
using a **9** point scale

Average change
from using tretinoin
0.5-1.0



IN 6
MONTHS

Before and after images in adverts



Actual photo images from the studies



BEFORE



AFTER

Actual photo images from the studies



BEFORE



AFTER

Actual photo images from the studies



BEFORE



AFTER

Actual photo images from the studies



BEFORE



AFTER

Try ones like these first



**Are these the best? - no one knows.
But they contain reasonable ingredients.**



Notice they come in **BIG** sizes

Smiling is the best anti-aging “cream”



Change Gears Yet Again





Adequately discuss costs?

Quantify potential benefits?

Quantify potential harms?

Evaluate quality of the evidence?

Avoid disease-mongering?

Establish true novelty of the idea?

Establish true availability of the idea?

Use independent sources & identify COI?

Compare the new idea with existing options?

Reflections on a 38-year career in public health advocacy: 10 pieces of advice to early career researchers and advocates

Simon Chapman^{a,b}

^a Sydney School of Public Health, University of Sydney, NSW, Australia

^b Corresponding author: simon.chapman@sydney.edu.au

Media attention on a public health issue is often more effective than private advocacy in winning policy change

- Advocacy must be evidence based, clear and concrete
- Speak out publicly, study the media and be available to speak at all times
- Use ‘killer (attention-grabbing) facts’, but place them in the context of a values system; care about what you are advocating for
- Use real people to illustrate your message
- Use social media
- Be patient; grow a ‘rhinoceros hide’

What to do when journalists call?

Answer the phone

Find out their deadline

Find out what the story is about

If you can't talk to them refer them to someone competent

If you like the piece that is published let them know

Bottom line: Don't curse the media, become the media

Some media tips/thoughts

Tell them if they wish to quote you, you need to see what they are going to say

Live is more nerve wracking, but it is safer than recorded interviews

As an academic your job should almost never be to promote something; it should be to provide a balanced and hopefully evidence-based review of a topic

Make it fun, don't be afraid to question dogma

Op-Eds, opinion pieces, evidence synopses, critiques, reviews

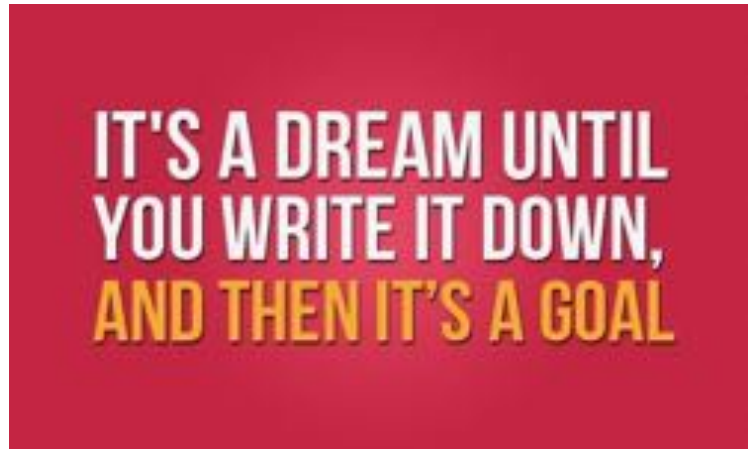
Don't worry about pissing people off as long as you can legitimately back up what you say



Write, write, **write**

“If You Didn't Document It,
It Didn't Happen”

“If You Didn't Write It Down,
It Didn't Happen”



write it down

The words "write it down" written in a black, lowercase, cursive script.