



MAYO CLINIC

Does FUTON & NAA Bias Impact Visibility of Cardiology Research?

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Background

- EBM has been revolutionized by access to the Internet
- Scientific articles on the Internet are either available as

FUTON* – Full Text On the Net
NAA* – No Abstracts Available

*Wentz R: Lancet 360:1256, 2002



#	Search History	Results	Display
1	Myocardial Infarction/	88906	Display
2	1	88906	Display
3	limit 2 to ovid full text available	7073	Display
4	1	88906	Display
5	limit 4 to abstracts	46168	Display

Saved Searches
 Save Search History
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Enter **Keyword** or phrase:

Map Term to Subject Heading

Perform Search

Limit to:

- Ovid Full Text Available
- Human
- English Language
- Review Articles
- Abstracts
- EBM Reviews
- Latest Update
- History of Medicine

Publication Year - -

1. Webb KE. Martin JF. Cotton J. Erusalimsky JD. Humphries SE. **The 4830C>A polymorphism within intron 5 affects the pattern of alternative splicing occurring within exon 6 of the thrombopoietin gene.** [Journal Article] *Experimental Hematology*. 31(6):488-94, 2003 Jun.

UI: 12829024

[Abstract](#) • [Complete Reference](#)

2. Pepys MB. Hirschfield GM. **C-reactive protein: a critical update.**[erratum appears in J Clin Invest. 2003 Jul;112(2):299]. [Review] [61 refs] [Journal Article. Review. Review, Tutorial] *Journal of Clinical Investigation*. 111(12):1805-12, 2003 Jun.

UI: 12813013

[Complete Reference](#) • [Ovid Full Text](#)

3. van Eickels M. Patten RD. Aronovitz MJ. Alsheikh-Ali A. Gostyla K. Celestin F. Grohe C. Mendelsohn ME. Karas RH. **17-beta-estradiol increases cardiac remodeling and mortality in mice with myocardial infarction.**[erratum appears in J Am Coll Cardiol. 2003 Jul 2;42(1):following 183]. [Journal Article] *Journal of the American College of Cardiology*. 41(11):2084-92, 2003 Jun 4.

UI: 12798586

[Abstract](#) • [Complete Reference](#)

4. Boland A. Dunder Y. Bagust A. Haycox A. Hill R. Mujica Mota R. Walley T. Dickson R. **Early thrombolysis for the treatment of acute myocardial infarction: a systematic review and economic evaluation.** [Review] [130 refs] [Journal Article. Review. Review, Academic] *Health Technology Assessment (Winchester, England)*. 7(15):1-136, 2003.

UI: 12773258

[Complete Reference](#)

5. Wayman NS. McDonald MC. Chatterjee PK. Thiemermann C. **Models of coronary artery occlusion and reperfusion for the discovery of novel antiischemic and antiinflammatory drugs for the heart.** [Review] [14 refs] [Journal Article. Review. Review, Tutorial] *Methods in Molecular Biology*. 225:199-208, 2003.

UI: 12769489

[Complete Reference](#)

6. Kaul S. **What lies beyond a chronically occluded coronary artery, and what should we do about it?**[comment]. [Comment. Editorial] *Journal of Nuclear Cardiology*. 10(1):92-4, 2003 Jan-Feb.

UI: 12569337

Background

There is a tendency to rely on full text articles on the net and selectively ignore articles without abstracts, “picking the low-hanging fruit

**This tendency creates a bias
FUTON Bias & NAA Bias
that may impact visibility of research**

Background

Impact factor: Institute for Scientific Information, Journal Citation Reports, 2001

Measure of the frequency with which an average article in a journal has been cited in a particular year

Objective

Does Impact Factor (IF) affect availability of articles as FUTON for cardiology journals online?

Methods

- Identified all cardiology journals
*MEDLINE, EmBase, BioMed Central
MegaSearch Engines*
- Online status on *MEDLINE* was
ascertained FUTON, NAA or
abstracts only
- IFs were abstracted from the ISI, JCR
2001

Results

**Identified
cardiology journals** **144**

FUTON **51**

NAA **28**

Abstracts **65**

Results

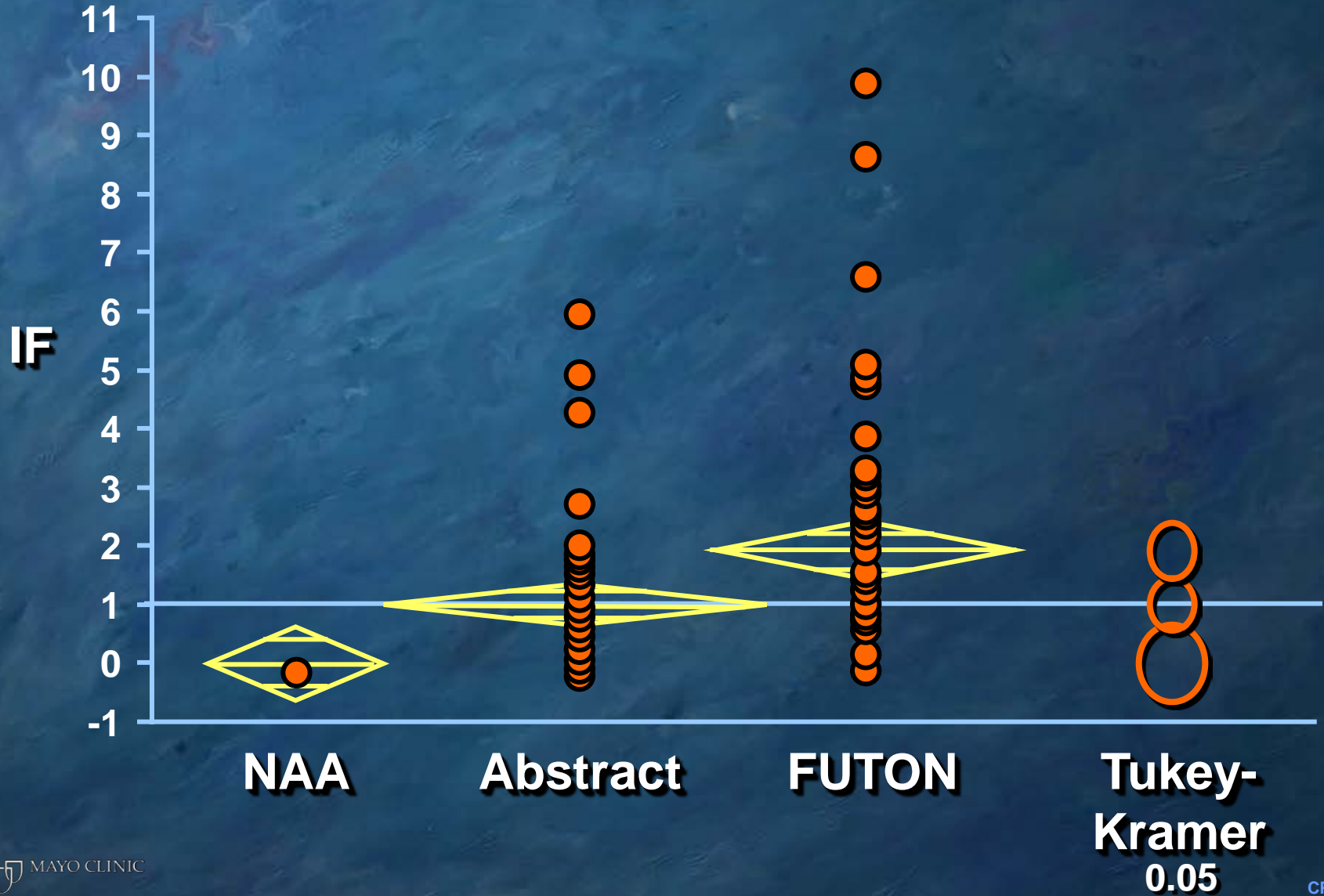
Impact factor	Mean \pm SEM	
FUTON	2.04	0.23
NAA	0.00	0.30
Abstracts	1.05	0.20

Results

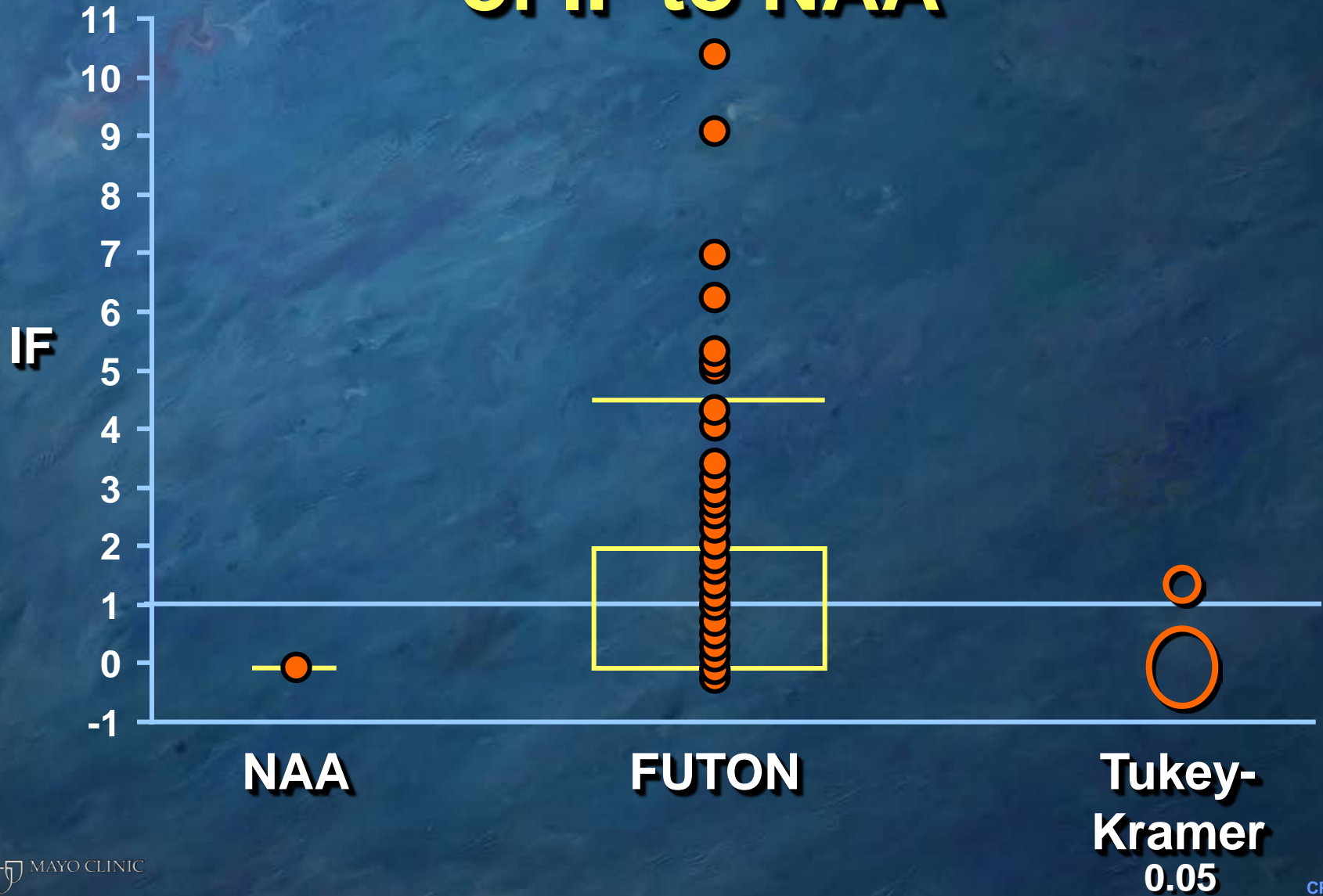
A 1-way ANOVA & Tukey Kramer HSD ($P=0.0001$) in the IF of journals by their availability as

- **FUTON**
- **NAA**
- **Abstracts**

Results: 1-Way Analysis of IF



Results: 1-Way Analysis of IF to NAA



Conclusion

This is the first study to show that cardiology journals with higher impact factors are more frequently available as FUTON

Conclusion

We know

- Libraries are moving towards more and more online subscriptions
- That more than half of Internet sessions end with downloading a full text article*
- That there is a universal tendency to **“pick the low-hanging fruit”**

*Delamothe: BMJ 325, Dec 2002

Conclusion

FUTON bias, the trend to pick the low-hanging fruit, and report visible articles

- **Will likely affect their impact factor**
- **Could potentially lead to ignoring relevant NAA articles**
- **Create a bias similar to publication or language bias**

