

# scienceWATCH<sup>®</sup>.com

TRACKING TRENDS & PERFORMANCE IN BASIC RESEARCH

[Interviews](#)
[Analyses](#)
[Data & Rankings](#)

What's Hot In... : What's Hot In Medicine Menu : Is Coronary Calcium a Useful Additional Risk Factor for Heart Disease? - Mar/Apr 2010

## WHAT'S HOT IN... MEDICINE, March/april 2010

### Is Coronary Calcium a Useful Additional Risk Factor for Heart Disease?

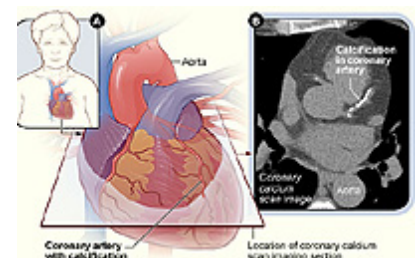
by David W. Sharp



Many clinicians will label the important papers at #1 and #10 as "wait and see" and look elsewhere in the Top Ten for everyday guidance. They will find plenty of food for thought but no final resolution of ongoing controversies. Nor will they see great variety in journals cited (two-thirds of the top 18 papers were published in the *New England Journal of Medicine*) or in topic. Predictably (as noted in *Science Watch*, Jan/Feb 2010) two articles on **prostate cancer** screening are gaining ground (#8 and #9). The management of patients with type 2 **diabetes** (*Science Watch*, May/June 2009) continues to attract attention (#2, #3, and #5) and there are a couple of outliers to fuel this long-running debate. At #13 is the Veterans Affairs study, which found that intensive (versus standard) blood glucose control had no significant effect on mortality, cardiovascular events, or microvascular complications (W. Duckworth, *et al.*, *New Engl. J. Med.*, 360[2]:129-39, 2009; total cites 115, latest count 38) while in #17 Danish researchers report that multiple interventions (i.e., not restricted to glucose control alone) did lead to sustained beneficial effects on mortality and vascular complications (P. Gaede, *et al.*, *New Engl. J. Med.*, 358[6]:580-91, 2008; total cites 219, latest count 33).

In 2007 an expert committee reintroduced "**obesity**," a word that had been avoided in official discussions of children's weight (S.E. Barlow, *Pediatrics*, 120[suppl]:S164-92, 2007). Without any shift in the cut-off points, the term "overweight" should, they said, be replaced by obesity and "at risk of overweight" should become simply overweight. The cut-offs are, respectively, body-mass index (BMI) at the 95th percentile for age or more and BMI in the 85 to 94 percentile range. Sometimes, other percentiles are used (e.g., 85, 97, and 99), or BMI itself in kilograms per meter squared is preferred. The prevalence in young people of severe obesity (BMI at or above the 99th percentile) tripled in a quarter of a century according to a U.S. study (J.A. Skelton, *et al.*, *Acad. Pediatr.*, 9[5]: 322-9, 2009). This increase is alarming, but figures from the first half of the 21st century hint

[+] enlarge



Coronary Calcium.

From the **National Heart Lung and Blood Institute, National Institutes of Health.**

- [ScienceWatch Home](#)
- [Inside This Month...](#)
- [Interviews](#)

- [Featured Interviews](#)
- [Author Commentaries](#)
- [Institutional Interviews](#)
- [Journal Interviews](#)
- [Podcasts](#)

#### Analyses

- [Featured Analyses](#)
- [What's Hot In...](#)
- [Special Topics](#)

#### Data & Rankings

- [Sci-Bytes](#)
- [Fast Breaking Papers](#)
- [New Hot Papers](#)
- [Emerging Research Fronts](#)
- [Fast Moving Fronts](#)
- [Corporate Research Fronts](#)
- [Research Front Maps](#)
- [Current Classics](#)
- [Top Topics](#)
- [Rising Stars](#)
- [New Entrants](#)
- [Country Profiles](#)

#### About Science Watch

- [Methodology](#)
- [Archives](#)
- [Contact Us](#)
- [RSS Feeds](#)

at a levelling-off. A study from the U.S. National Center for Health Statistics found no significant trend in high BMI over two-year periods in the time span 1999 to 2006 (C.L. Ogden, *et al.*, *JAMA*, 299[10]: 2401-05, 2008; total cites 149, latest count 39, currently ranking #12).

If, when considering the prediction of coronary heart disease, we need to add to risk factors such as smoking, high blood pressure and raised cholesterol, coronary-artery calcium (CAC) could be a candidate (for one review see M.J. Budoff and K.M. Gul, *Vasc. Health Risk Manag.*, 4[2]: 315-24, 2008). Its measurement is non-invasive; the technique involves computed tomographic scanning with radiographic phantoms of known calcium content placed beneath the patient's chest. Reviewing no fewer than nine "emerging risk factors" for the U.S. Preventive Services Task Force, Dr. Mark Helfand and colleagues set the bar high (*Ann. Intern. Med.*, 151[7]: 496-507, 2009). A new test should add significantly to the predictive power of the established, so-called Framingham, package not only by reclassifying a high proportion of those labelled as of intermediate risk and but also by leading to an effective change in clinical management.

The measurement of CAC—unlike that of homocysteine, C-reactive protein and lipoprotein(a), which are also candidates and can be studied in blood deep-frozen long ago for other reasons—cannot be done retrospectively. For CAC, therefore, the acquisition of good evidence requires much patience. One of the studies cited in Helfand and colleagues' review (R. Detrano, *et al.*, *New Engl. J. Med.*, 358[13]: 1336-45, 2008; total cites 100, latest count 32) currently lies at #18. These workers found that the cumulative incidence of coronary events over the years of follow-up was significantly related to the CAC score. A common statistical technique in predictive studies such as this is to calculate something called the area under the receiver-operating-characteristic curve. This allows traditional risk factors alone to be compared with those same factors with the new test (CAC) added. There was a significant improvement but it was small (from 0.79 to 0.83 for major coronary events, the maximum being 1.00) and as this was not an intervention trial no light is thrown on the second of Helfand and colleagues' rightly demanding criteria. ■

***A former deputy editor of The Lancet, David W. Sharp, M.A. (Cambridge) is a freelance writer living in Minchinhamptom, U.K.***

### Medicine Top 10 Papers

Rank	Paper	Citations This Period (Sep-Oct 09)	Rank Last Period (Jul-Aug 09)
1	J. Yu, <i>et al.</i> , " <b>Induced pluripotent stem cell lines derived from human somatic cells</b> ," <i>Science</i> , 318(5858): 1917-20, 21 December 2007. [Genome Ctr. Wisconsin, Madison; U. Wisconsin, Madison] *243HE	81	1
2	The ACCORD Study Group (H.C. Gerstein, <i>et al.</i> ), " <b>Effects of intensive glucose lowering in type 2 diabetes</b> ," <i>New Engl. J. Med.</i> , 358(24): 2545-59, 12 June 2008. [Writing Group: 10 U. S. and Canadian institutions] *311IJ	72	2
3	The ADVANCE Collaborative Group (A. Patel, <i>et al.</i> ), " <b>Intensive blood glucose control and vascular outcomes in patients with type 2 diabetes</b> ," <i>New Engl. J. Med.</i> , 358(24): 2560-72, 12 June 2008. [Writing Group: 18 institutions worldwide] *311IJ	60	4

4	S.D. Wiviott, <i>et al.</i> , " <b>Prasugrel versus clopidogrel in patients with acute coronary syndromes</b> ," <i>New Engl. J. Med.</i> , 357(20): 2001-15, 15 November 2007. [8 institutions worldwide] *230RV	53	9
5	R.R. Holman, <i>et al.</i> , " <b>10-year follow-up of intensive glucose control in type 2 diabetes</b> ," <i>New Engl. J. Med.</i> , 359(15): 1577-89, 9 October 2008. [6 U.K. institutions] *358FS	49	6
6	K. Miller, <i>et al.</i> , " <b>Paclitaxel plus bevacizumab versus paclitaxel alone for metastatic breast cancer</b> ," <i>New Engl. J. Med.</i> , 357(26): 2666-76, 27 December 2007. [9 U.S. and Canadian institutions] *245UO	47	†
7	J.M. Llovet, <i>et al.</i> , " <b>Sorafenib in advanced hepatocellular carcinoma</b> ," <i>New Engl. J. Med.</i> , 359(4): 378-90, 24 July 2008. [22 institutions worldwide] *329FK	44	5
8	F.H. Schroder, <i>et al.</i> , " <b>Screening and prostate-cancer mortality in a randomized European study</b> ," <i>New Engl. J. Med.</i> , 360(13): 1320-8, 26 March 2009. [15 institutions worldwide] *423VP	43	10
9	G.L. Andriole, <i>et al.</i> , " <b>Mortality results from a randomized prostate-cancer screening trial</b> ," <i>New Engl. J. Med.</i> , 360(13): 1310-9, 26 March 2009. [16 North American institutions] *423VP	43	†
10	I.H. Park, <i>et al.</i> , " <b>Reprogramming of human somatic cells to pluripotency with defined factors</b> ," <i>Nature</i> , 451(7175): 141-6, 10 January 2008. [Harvard Med. Sch., Boston, MA; Harvard Stem Cell Inst., Boston, MA] *249GA	42	†

SOURCE: Thomson Reuters Hot Papers Database. Read the [Legend](#).

KEYWORDS: Type 2 diabetes, blood glucose, obesity, overweight, body mass index, BMI, coronary artery calcium, Mark Helfand.



[back to top](#)

[What's Hot In...](#) : [What's Hot In Medicine Menu](#) : [Is Coronary Calcium a Useful Additional Risk Factor for Heart Disease?](#) - Mar/Apr 2010