Vitamin B3 and miscarriage

By Dr David Moore, 13 August 2017

This week, media outlets widely reportedfindings of an Australian study linking vitamin B3 to birth defects and misc England Journal of Medicine, was undertaken by an Australian research team headed by Professor Sally Dunwoodie. Tl to the discovery of the link between folate and neural tubes defects such as spina bifida.

Unfortunately, though perhaps not surprisingly, media enthusiasm has allowed a good headline to get in the way of resp association between vitamin B3 and birth defects (in mice) is interesting, important, and creates many questions fo "preventing millions of women from suffering miscarriage".

In a nutshell, the researchers of this study:

- Tried to identify random genes that might be associated with the occurrence of multiple congenital abnormalities (tha the same person, suggesting something more than just random chance at work).
- Found a couple of possible genes, among four families that included such individuals.
- Determined that these genes were associated with NAD metabolism - mutations in these genes meant less NAD pro
- Created "knockout" mice (that is, mice that were genetically engineered to make zero NAD by completely removing a these families, that had the genes, but some mutation in them that reduced their function). That is to say, they create metabolisms.
- Determined that these mice had babies with lots of congenital abnormalities (and early abortions probably related to abnormalities).

- Acknowledged that NAD is synthesised using ether niacin (B3) or tryptophan (found in cheese).
- Fed the mummy mice niacin and fixed the problem (which they created.)
- Concluded that:
  - NAD is important to embryogenesis (like many other things.) -- *this seems reasonable.*
  - Removing it entirely creates problems, in a mouse model at least. -- *interesting.*
  - Removing it and replacing it prevents these problems. -- *also interesting, perhaps notsurprising given the first tw*
  - Theorised that niacin supplementation may be usefulin these families with recognised gene mutations affecting *be answered.*

Importantly (and curiously left out by the media):

- They didnt actually conclude (nor should they), that niacin supplementation reduces birth defects in normal families.
- NOWHERE in their study is the word miscarriage or phrase first trimester loss used(even though the entire media re
- There are no trials (intervention trials) looking at the effect of NAD/niacin/B3 on low-risk women (or low-risk/non-mut
- Likewise, there are no intervention trials looking at supplementation in HIGH risk women, such as in these families.
- There is NO safety data about high-dose niacin supplementation

The assumption is that something occurring naturally cant be bad, BUT the entire HRT fiasco came from initial studies s because it prevents heart disease, and women with early menopause have more heart disease, so extra oestrogen mus just turned out to have more strokes, more clots (and MORE heart disease!) the painful lesson from the HRT trials is t something useful, is not without risk.

After much pain, a few law suits, and many more trials, we eventually settled on HRT benefits may outweigh risks, in*som*

The unfortunate but inevitable consequence of over-enthusiastic journalism that reports gross extrapolations of animal s and currently unfounded - hope of a treatment that is not only unproven, butalso untested. With headlines like these, th B3 supplements.

Nevertheless, let's look forward to the follow-upstudy findings from this Australian team of researchers!

Important information for Medibank Private members

By Dr David Moore, 22 August 2015

Medibank Private is taking action to increase shareholder profits by drastically limiting the value of their insurance prod touted at improving healthcare outcomes but, in truth, are without any evidence basis and are completely unval Medibankmembers are at risk of finding themselves completely without insurancecoverage, at no fault of their own, th This is the thin end of a tactical wedge being aimed between patients and their healthcare choices; the endpoint would lik Healthcare, where insurers dictate from which doctors and hospitals patients may receive care, as determined by the insu

Read what the Australian Private Hospitals Association has to say about the movehere. *Remember, all Australians are without penalty.*

Vote with your feet.

Influenza vaccination in pregnancy - proven efficacy

By Dr David Moore, 11 September 2014

Every now and then, a "landmark paper" - a paper of great clinical significance - comes along. Ibelieve we've seen one th

A paper published this week in the *New England Journal of Medicine* is the **first** to show, through the power of a randon way of determining whether a cause-effect relationship exists between a treatment and an outcome), that **influenza mothers and babies.**

The researchers enrolled over 2300 pregnant women and randomised them to receive the current influenza vaccinat weeks of pregnancy. From the date of vaccination, women were contacted weeklyto detect symptoms of a "flu-like specifically for influenza through highly-specific PCR testing. Women were followed up until about 6 months after birth, to about 6 months of age.

As well as showing that both mothers and babies had "boosted" immunity (through testing the levels of protective antibod almost **50% reduction** in PCR-proven influenza infection in **both mums and babies.**

This is of major public health importance for two reasons: firstly, pregnant women are recognised as being the ad illness during epidemics and pandemics, even in high-income countries like Australia. Secondly, young infants are parti affected by)influenza illness, and no vaccine is currently licensed to protect this age group.

Influenza vaccination is already recommended (and PBS subsidised) for pregnant women in Australia. It does not co vaccinechanges every year, to keep up with the current seasonal influenza virus strains. This study provides final valida is a good idea, and the researchers are to be congratulated.

Now, go and get your vaccination!

Epidurals and postpartum depression

By Dr David Moore, 30 July 2014

A recent study has suggested an association between epidural use in labour and a reduced rate of postpartum depres true...

The research paper, published here in *Anesthesia & Analgesia*, found that women who used epidural analgesia in labou compared to nearly 35% of women who did not have an epidural. Sounds great! While I'm all in favour of women access headline prompted me to read a little deeper...

The study was a prospective observational study, which means that confounding factors (other aspects that may accounted for entirely (best achieved through a randomised controlled trial). Ok, not a biggie; but the authors rightfull which doesn't infer a causal link between the exposure (epidurals) and the outcome (postpartum depression). This is studies, which is generally overlooked in the media.

Additionally, the overall rates of postpartum depression described in the study are alarmingly high - around 25%. postpartum depression according to a score on the Edinburgh Postnatal Depression Scale (EPDS). While the E questionnairedesigned to screen women for symptoms of emotional distress during or after pregnancy, and reflects th seven days. While it is very helpful in identifying women at risk, it is not equivalent to a diagnosis of clinical depression *pe*

Finally, the authors suggest a possible biological link between pain, post-traumatic stress-type symptoms, and postna associate pain and depression. However, women in this study who chose not to have an epidural, received **no oth** analgesia are not available at our hospital". This is unlike any hospital I've ever worked in, and makes no sense; "generalisability" of the study (medical speak for how well we can expect study findings in a particular population to apply

So, overall, an interesting study that presents an intriguing association between epidural use and a (thankfully)positive bi be interpreted with measured cautionand, hopefully, responsible journalism will prevail overattention-grabbing headline unduly influence women's birth choices.

More research to support whooping cough vaccination during pregnancy

By Dr David Moore, 19 May 2014

Whooping cough, also called the 100 day cough, is an illness cause by the bacterium *Bordetella pertussis*. While often ca can be life-threatening in children, especially newborn infants. In fact, over 90% of deaths from pertussis infection Pertussis vaccination forms part of the Australian Immunisation Schedule, and begins in children at two months of age. vaccinated during the highest-risk period of their lives. Immunisation does not provide lifelong immunity and, until recommended for dads-to-be and new mums, in attempt to reduce the likelihood of their new baby being exposed to pare

The idea of vaccinating pregnant women has been around for a while, with the rationale that maternal antibodies will pas immunity" againstthe infection at birth and in the newborn period. Additionally, the safety of this vaccine is well-establishe "live" vaccine). However, this concept has not been readily proven, as "protective levels" of antibody in baby's blood l there has also been concern that such maternal antibodies may dampen the baby's immune response to their own child effect of the vaccine schedule.

A research paper publishedthis month in JAMAhas provided further insights into the possible benefits of vaccinating These researchers randomised women to pertussis vaccination during pregnancy, or vaccination after birth. Mostof the vaccination at some point previously during their lives. They measured levels of protective antibodies in mothers near de age, and after completion of their routine childhood pertussis vaccination program. Reassuringly, they found that vaccin children's response to routine childhood vaccination. Additionally, they confirmed that levels of protective antibodies wer mothers vaccinated during pregnancy. Although this study was not powered to prove a reduction in newborn pertussis ir study), and theprotective threshold of antibody levels is not known, this research adds strength to the argument fo ***pregnancy***, to maximise the levels of protective antibodies present during their babies' most vulnerable time for infection

Are babies who are "turned" by ECV still more likely to be born by caesarean section?

By Dr David Moore, 16 May 2014

...a little, yes.

A new systematic review published ahead of print in Obstetrics & Gynaecology this week has confirmed thatthe rate o women who have had a baby successfully turned from a breech to a cephalic presentation by ECV. In this study, the rat was 21%, which compares to an intrapartum caesarean section rate for women with cephalic-presenting babies ofaro safe, simple, and scientifically valid method for women wishing to avoid caesarean section; the authors found that three to prevent one caesarean section. In medicine this is called the "number needed to treat", or NNT. The lower the NNT, th of three is excellent.

Does low dose aspirin reduce the risk of miscarriage?

By Dr David Moore, 3 April 2014

According to an RCT published in The Lancet this week -maybe...

Low-dose (75-100mg) daily aspirin ("LDA"), commenced before 16 weeks,has been shown in high-powered studies to outcomes such as pre-eclampsia, fetalgrowth restriction, and preterm birth. The effect is strongest in high-risk women (v events in previous pregnancies; see Villa *et al*, BJOG 2013 and Roberge *et al*Ultrasound O&G 2013). As often happen we become tempted to prescribe these*proven*therapies for indications in which they are*unproven*. Recurrent miscarriage as three or more consecutive pregnancies ending in miscarriage before 20 weeks) causes immeasurable anguish to c mitigating against future pregnancy loss. Interestingly, LDA coupled with low dose heparin has been shown to reduce th with RPL*who also have antiphospholipid syndrome*; whereas this recipe has no effect in women with RPL in the absence *al*Cochrane 2009).

The use of LDA in women *without* RPL (that is, one or two miscarriages only) has found mixed results with small, unpov most recent, large, placebo-controlledRCT (dubbed the "EAGeR study") sought to scrutinise this relationship more clea such women on LDA before conception, and found no improvement in livebirth or miscarriagerates for women who h concluded that routine LDA should not be used in this group. Interestingly, however, their data *did* reveal a statistically livebirth rates in a group of women who had one previous miscarriage, before 20 weeks, within the last year. Hmm... perhaps it's a statistical anomaly ("Lies, damned lies, and statistics"), but certainly that little chestnut requires more rese of causes, and there's no biologically plausible way that aspirin would improve many of them (such as chromosomal prob

So, bottom line, LDA shouldn't be used indiscriminately with the hope of improving livebirth rates - we have good evider benefit, and quality evidence to refute benefit in other populations. This study adds to this knowledge.

PS- I often get raised eyebrows when discussing aspirin use in pregnancy ("isn't that harmful?") - there is extensive evid *suitably prescribed* in pregnancy (James*et al*O&G Survey 2008).

Excisional procedures for CIN2-3 do not increase the risk of preterm birth.

By Dr David Moore, 2 April 2014

Pre-cancerous lesions of the cervix (i.e. CIN2-3), detected by Pap smear screening and confirmed by colposcopy and bio procedure such as a LLETZ or LEEP. In women who have not yet completed their childbearing, these procedures have birth, and this is factored into decision-making when choosing active treatment (excision) versus a "wait and see" appr have suggested that the changes to cervix's microstructure due to the disease process itself, and not the treatment pro preterm birth. This week a large meta-analysis of available evidence has been published in the journal Obstetrics & G underwent a LLETZ/LEEP to women who have not, they confirmed this procedure is associated withan increase in the (or an absolute risk increase of 3%). However, when comparing to women who underwent a LLETZ/LEEP to women kn *surgery*, there was **no difference** in the rates of birth before 37 weeks. ***This is the strongest evidence to date to su an independent risk for preterm birth***, and this information will no doubt alter how we counsel women when deciding th

*(Data excluded laser and cone biopsies)

Articleavailable here.

Eating allergenic foods during pregnancy won't cause allergies in children

By Dr David Moore, 24 March 2014

Heard the old wives' tale about avoiding "allergy foods" in pregnancy, lest

Well some more evidence to put
A cohort study in press has examined the association between mothers' intakes of common food allergens during pregna allergy. The researchersfound NO evidence that avoiding food allergens results in a reduced risk of childhood allergy; i odds of childhood asthma/allergies when mothers' diets were high in

So, bottom line, *prospective parents **do not** need to worry about restricting their diets out of fear of causing allergies in th*

View abstract here.

Paracetamol use in pregnancy linked to ADHD

By Dr David Moore, 3 March 2014

Although media outlets like to lead with attention-grabbing headlines, we need to be careful not

An interesting [article published recentlyin JAMA Pediatrics] which observed an association between paracetamol use in
such as

However, it is important to remember that statistical associations do not prove causation. Although this is a very large,
so not all potential confounders (i.e. things that can influence results other than a true causal relationship between parac
The researchers were careful to control their data for things like fevers and infections (as recalled by the women), but ca
take paracetamol, and therefore can't account for the potential interactions between these and risk of ADHD; develop
genetic predisposition, non-inhereited factors and, potentially, environmental exposures. Other conditions that have simil
to migraines or pain syndromes (which could not all be accounted for in a study of this design) are also reasons why
relationships become a little difficult

An important lesson in effects of study design was demonstrated by the Womens' Health Initiative HRT trials - while c
protect women from heart disease, follow-up data from randomised trials showed the opposite - HRT increased cardiova
paracetamol is used, such as fever, are known to be harm

So, while this study has provided some important information, more study will be required, along with subsequent risk-be
recommend avoiding paracetamol in pregnancy.

Twin Birth Study published!

By Dr David Moore, 14 October 2013

Canadian researchers have recently published the findings of a randomised control trial comparing outcomes for mothers
planned vaginal birth to planned vaginal delivery. This study took place over 7 years and across more than 100 countri
2800 women with twins who gave birth between 32 weeks and 38weeks 6 days of pregnancy. Their findings were in lir
which have shown that twins tend to be born earlier and with slightly more complications than their singleton counterparts.
baby to be born (usually called "twin 2") generally bears more risk than the first twin. Importantly, however, this large, v
outcomes between those who planned a vaginal birth and those who planned a caesarean section.This finding gi
information with which to base their choices and plans about childbirth.The abstract of this landmark clinical trial is availabl

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29 July 2013

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