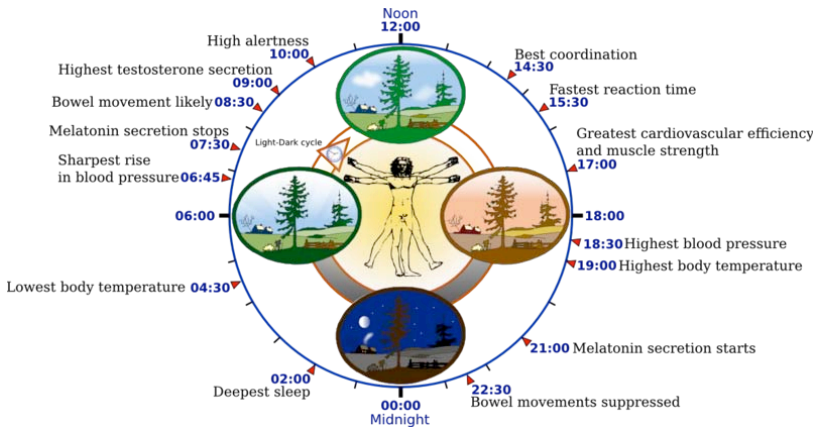


# OrBITS



## Eyes - More than Vision

Some people who are blind, in addition to having to cope with partial or no sight, have an added handicap - the transmission of ocular light from the retina to their circadian clock is impaired.



In mammals, the eye is the only photo-receptive organ for image forming and non-image forming visual functions such as circadian photo-entrainment, pupillary light reflex, and inhibition of melatonin release. Three photoreceptive cell types; rods, cones, and melanopsin-expressing intrinsically photosensitive retinal ganglion cells (ipRGCs), are responsible for light detection in the retina. Rods and cones are essential for the formation of visual images, whereas ipRGCs are necessary for non-image forming visual functions. The light response in ipRGCs originates both from the intrinsic melanopsin-photopigment dependent response and from light signals arising from rods and cones. These retinal cells are connected directly to the supra-chiasmatic nuclei in the anterior hypothalamus. When this pathway is disrupted, the rest-activity cycle fails to be synchronized to the Light - Dark cycle. The critical role of both the rod-cone and melanopsin systems in mediating the effects of light on sleep imply that humans with deficits in either retinal pathway could be particularly vulnerable to acute effects of light and dark on sleep and wakefulness. *con't P2*

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## Letter from the President

Well it doesn't take long for the year

to go when you're busy as I am sure you all are with ever increasing practice demands and increasing numbers of patients. If you're like me the days never seem long enough including days off.

Many apologies for the cancellation of the December clinical meeting but due to circumstances beyond our control it was unable to proceed but we will be organising another wetlab early next year to ensure members get their membership entitlements. Alcon are very keen to assist so we thank them for the eager support.

At the last Biennial conference there was a majority response that opted for meetings to be held in conjunction with RANZCO and to hear nurses present so the committee is aiming to deliver member requests. So to do this we are supporting our Tasmanian members by assisting them in holding a day clinical meeting in conjunction with RANZCO in Tasmania in February next year. It is a good chance to support your ophthalmic colleagues in Tasmania, enjoy the Tassie hospitality and have a short break.

For more information see notice in newsletter or on our website as program details will be finalised in January. The day will be a combination of addresses by both medical and nursing personnel as well as clinical practice activities.

So all in all there will be the usual 4 clinical meetings for free with an extra RANZCO nurses meeting at a reduced rate. We have started preparation for our Biennial conference in September 2010 so put Saturday 4<sup>th</sup> September in your diary. It will be earlier than usual as we aim to support our South Australian members in their clinical meeting in November. *con't P3*

Presidents Report con't

At the AGM the existing committee along with 2 new Melbourne based members & an interstate member our committee were voted in. It's great to have a variety of perspectives, urban, rural and interstate. As meetings are now teleconferenced (even when we meet face to face if anyone can't make it we teleconference when necessary. We always welcome new insights.

We have been in discussion with Nurses Board Victoria in regard to nurse prescribing and National registration in regard to our specialty. We will update you early in 2010 with those discussions. It's great to see AONA Vic continuing to be invited to participate in projects to represent the specialist area of ophthalmic nursing.

You will be pleased to know our membership is steadily increasing with many first time members joining. Our membership stands at 112 at the end of October. The

constant member base has nearly doubled in 6 years. We have also gained the support of new sponsors.

It is being suggested that an Ophthalmic Nursing Journal may commence again, this time in partnership with Orthoptists so please fill in the survey in the newsletter & when it's up and running think about articles you might like to contribute. It depends on nurses to support it to ensure it's survival.

So I will keep this note brief as people are busy with their end of year rush but I would like to take this opportunity to members for their support, to say a big thank you to the committee members their voluntary work and professional commitment to the association's continuance.

Thanks for reading & best wishes for a Happy Christmas & a bright, prosperous New Year to everyone.

*Cheers Pam*

## AONAVIC Events for 2010

AONA Victoria are already planning for 2010.

- Our biennial conference will take place on Saturday the **4th of September**.
- We are assisting our Tasmanian members to run a clinical day on Saturday the **13th of February** in Hobart (*running concurrently with the Hobart RANZCO scientific meeting*)
- We are also planning to run a wetlab early in the year to replace the postponed December meeting - details to follow.
- And we will be finishing our year off in Adelaide in November @ RANZCO, assisting our South Australian members with their clinical meeting.

### Orbis FEH

*Use your talents to participate in ORBIS's mission to reduce blindness in developing countries worldwide.*

The **ORBIS Flying Eye Hospital (FEH)** is a unique mobile teaching and operating facility on board a DC-10 jet aircraft that travels to developing countries worldwide to share the gift of sight. Our Flying Eye Hospital staff travel up to 45 weeks per year and anywhere from a few weeks to 3 months at a time. For more information about ORBIS and this employment opportunity, please visit our website: "[www.orbis.org](http://www.orbis.org) To apply, email your cover letter to [HR@orbis.org](mailto:HR@orbis.org)

### ARTICLES OF INTEREST

Are you pioneering new procedures, new equipment, pharmaceuticals, treated interesting cases? Let us know what's happening out there - articles for OrBits are most welcome.

Please contact Pat Usher - [Pat.Usher@eyeandear.org.au](mailto:Pat.Usher@eyeandear.org.au)

*Con't Eyes:* Assessment of sleep patterns in blind people demonstrates a high prevalence of sleep disorders. Studies have shown that subjects with no conscious light perception (NPL) have a higher occurrence and more severe sleep disorders than those with some degree of light perception (LP).

Sleep is controlled by two mechanisms, homeostatic and circadian. In the homeostatic mechanism, prolonged wakefulness increases sleep drive, whereas the circadian oscillator partitions sleep within the day-night cycle. For optimal sleep, both the homeostatic and the circadian mechanisms must be synchronized. "...In a majority of totally blind individuals, the biological clock is no longer synchronised, or entrained, by the light dark cycle.

**Melanopsin is the photopigment that confers photosensitivity to a subset of retinal ganglion cells (pRGCs) that regulate many non-image-forming tasks such as the detection of light for circadian entrainment.**

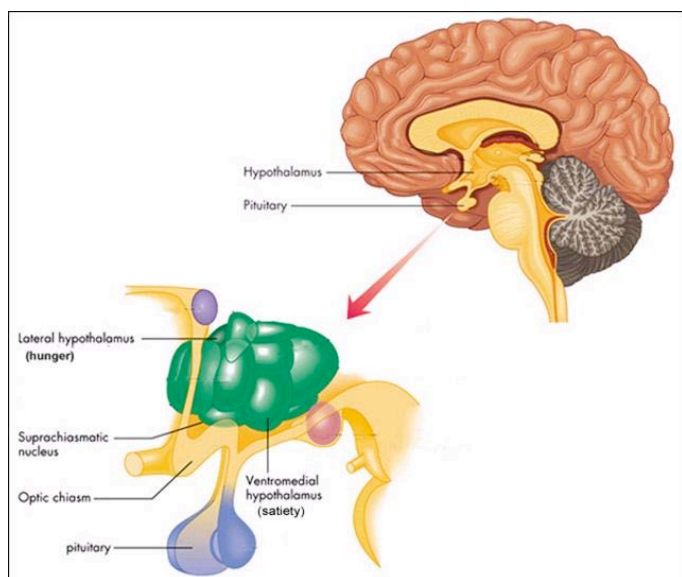
oscillator in a process of photo-entrainment. However, light also affects alertness in humans, indicating a possible direct role for light on the sleep-wake state.

Daily administration of exogenous melatonin is the current treatment of choice for this so-called "non-24h sleep/wake disorder".

Melatonin has been shown to correct the underlying circadian rhythm abnormality as well as improve sleep and reduce daytime napping.

The effectiveness of melatonin therapy depends upon its time of administration relative to the timing of the person's circadian clock. If practicable, assessment of an individual's circadian phase (by measurement of the endogenous melatonin rhythm in plasma, saliva or urine) is recommended prior to commencing treatment to optimise melatonin's effectiveness.

Other sleep disorders that have relationships with ophthalmic disease or complications include obstructive sleep apnoea (OSA) - floppy eyelid syndrome, Glaucoma - POAG & normal tension glaucoma, Nonarteric Anterior Ischaemic Neuropathy (NAAION), papilloedema, CPAP eye complications and Nocturnal Lagophthalmos. Even though we don't thoroughly understand the mechanisms we need to understand the need to assess and treat our patients holistically to ensure optimal care and the best outcome for the patient.



Despite exposure to regular social cues...the circadian phase of biological events in these individuals continues to drift to a progressively later hour. They suffer from periodic bouts of night time insomnia and day time hypersomnolence. Light is known to affect sleep, predominantly by modulating the phase of the circadian

[http://en.wikipedia.org/wiki/File:Biological\\_clock\\_human.PNG](http://en.wikipedia.org/wiki/File:Biological_clock_human.PNG)

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<http://linkinghub.elsevier.com/retrieve/pii/S1389945706006861>

<http://www.pnas.org/content/105/50/19998.full>

<http://www.ncbi.nlm.nih.gov/80/pmc/articles/PMC2691600/>

<http://www.jneurosci.org/cgi/content/abstract/29/39/12332>

<http://books.google.com/books?hl=en&lr=&id=C8tOecmUaw0C&oi=fnd&pg=PA311&dq=human+blindness+%26+opn4&ots=rYkRZuaoac&sig=HiCnM1VkJj6F2j7GsRi2S1BR0Y#v=onepage&q=&f=false>

<http://www.ncbi.nlm.nih.gov/pubmed/17420154>

**Melatonin is a hormone produced in the brain by the pineal gland, from the amino acid tryptophan. The synthesis and release of melatonin are stimulated by darkness and suppressed by light, suggesting the involvement of melatonin in circadian rhythm and regulation of diverse body functions. Levels of melatonin in the blood are highest prior to bedtime.**



School of Community and Health Sciences

City University London

## Survey for Quarterly Nursing and Orthoptists Journal

At the recent World Association of Eye Hospitals Conference, nursing discussed the development of a journal for nurses, and possibly orthoptists and optometrists. Mark Allen Publishers in the United Kingdom has expressed an interest in publishing this journal on a quarterly basis. In order to determine if the journal would be financially viable the questions on this questionnaire must be answered.

Please take a few minutes to answer this questionnaire and return it to:

**Christina Constantinou**  
**School of Community and Health Sciences**  
**West Smithfield Site**  
**20 Bartholomew Close**  
**London**  
**EC1A 7QN**

[Christina.Constantinou.1@city.ac.uk](mailto:Christina.Constantinou.1@city.ac.uk)

AONA Victoria have been contacted by Janet Marsden, an ophthalmic nurse practitioner from Manchester University, requesting assistance with the distribution of the survey throughout Australia and New Zealand. A hard copy has been included with your newsletter and it will be made available on the website for you to email the survey if you prefer. If you are interested in the development of a journal please participate in the survey.

Thank you for your interest in developing a journal for ophthalmic nurses.

## Red meat and Chicken consumption and its association with Age-related Macular Degeneration.

**Chong EW, Simpson JA, Robman LD, Hodge AM, Aung KZ, English DR, Giles GG, Guymer RH.** Centre for Eye Research Australia, University of Melbourne, 32 Gisborne Street, East Melbourne 3002, Victoria, Australia. [Elaine.Chong@eyeandear.org.au](mailto:Elaine.Chong@eyeandear.org.au)

Age-related macular degeneration (AMD) is the leading cause of blindness among older people, and diet has been postulated to alter risk of AMD. To evaluate associations between red meat and chicken intake and AMD, the authors conducted a cohort study of 6,734 persons aged 58-69 years in 1990-1994 in Melbourne, Australia. Meat intake was estimated from a food frequency questionnaire at baseline. At follow-up (2003-2006), bilateral digital macular photographs were taken and evaluated for AMD (1,680 cases of early AMD, 77 cases of late AMD). Logistic regression was used to estimate odds ratios, adjusted for age, smoking, and other potential confounders. Higher red meat intake was positively associated with early AMD; the odds ratio for consumption of red meat > or =10 times/week versus <5 times/week was 1.47 (95% confidence interval: 1.21, 1.79; P-trend < 0.001). Similar trends toward increasing prevalence of early AMD were seen with higher intakes of fresh and processed red meat. Conversely, consumption of chicken > or =3.5 times/week versus <1.5 times/week was inversely associated with late AMD (odds ratio = 0.43, 95% confidence interval: 0.20, 0.91; P-trend = 0.007). These results suggest that different meats may differently affect AMD risk and may be a target for lifestyle modification.

PMID: 19234096 [PubMed - indexed for MEDLINE]

Planning on attending an Ophthalmic related conference?

AONA Vic will have it's Education Fund Policy and application forms rolled out early in the new year to assist our members with some of the costs of attending various meetings and conferences, around Australia and the world. keep an eye out.....

We will also be applying to the RCN for CNE points for our conference in 2010.