Welcome

Welcome to the first edition of the newly re-launched research update newsletter. This will be sent out regularly to tell readers more about the research programme and individual research projects being supported or undertaken by Guide Dogs.

Guide Dogs currently funds a hugely important research programme that helps provide sound evidence on which to base our operational procedures, policies and campaigns. We then implement the findings from our research to ensure that the services and support we provide best meet the needs of blind and partially sighted people, helping them retain their independence and mobility.

Our research programme focuses on three main areas: ophthalmic, canine and psychosocial.

If you have any queries about anything in the newsletter, or would like to find out more about a particular aspect of our research, please contact jackie.brookes@guidedogs.org.uk.
Developing a new, non invasive therapy for eye conditions

Researchers at the University of Manchester are aiming to develop a new drug for treating certain eye conditions that could replace more invasive and uncomfortable treatments. These particular eye conditions are characterised by abnormal development of blood vessel growth in the eye and include some of the major causes of blindness, such as ‘wet’ age-related macular degeneration and proliferative diabetic retinopathy.

If successful, the drug could potentially preserve residual vision, which would make a significant difference to the mobility of blind and partially sighted people.

The researchers, led by Professor Paul Bishop, have discovered a naturally occurring protein called opticin in the vitreous humour (the transparent substance filling the eyeball behind the lens). They have already shown that opticin can inhibit the formation of blood vessels. The aim is now to develop an opticin-based drug that can be delivered to the inside of the eye through the coating structures of the eye, rather than by direct injection.

The purpose of the project is now to make progressively smaller fragments of opticin, testing to see whether they still block blood vessel formation. Once they have achieved the minimum sized fragment of opticin that is still effective, their aim will be to develop it into a drug.

Depression and visual impairment

Being diagnosed as blind has a significant mental and emotional impact on the individual. Preliminary studies suggest 30 per cent of individuals diagnosed suffer from depression as a result, with many more having depressive symptoms. This can leave them unable or unwilling to find out about rehabilitation services, which has a negative impact on their mobility. At the moment, screening for depression and referral for treatment is not an integral part of visual rehabilitation services. One reason for this may be that there is no good evidence about the effectiveness of those treatments.

A team at Cardiff University, led by Dr Tom Margrain, is completing a three-year study, which will help shape future service delivery. First, the team will estimate the prevalence of depressive symptoms in people attending low vision services in England and Wales.

Low vision rehabilitation services typically involve optometrists working with social services and the voluntary sector to promote independent living, for example by providing magnifiers for reading. These services have been shown to reduce the impact of sight loss but not positively affect the person’s quality of life. One reason for this may be untreated depression.

The research team will then compare three types of treatment for newly diagnosed low vision patients with depressive symptoms. The treatments are: the existing rehabilitation services (this will be the ‘control’ treatment); referral to the patient’s GP informing them that the patient has depressive symptoms; and the use of problem solving therapy (recommended by the National Institute for Health and Clinical Excellence).
Children and young people with sight loss share the same worries as their sighted peers, value computer technology as a way of providing social contact, and develop a range of strategies to cope with bullying and exclusion. How they see their quality of life tends to differ, sometimes widely, from the views of their parents.

These are some of the findings from a research project which could help shape services for visually impaired children and young people. It is being led by Dr Valerie Tadic and Professor Jugnoo Rahi, working with colleagues at the Institute of Child Health, Great Ormond Street Hospital, Moorfields and the University of Warwick.

The researchers looked at ways of measuring the impact of sight loss by asking 71 children and young people aged 10-15 to assess their own quality of life using a draft 47-point questionnaire. The questionnaire had been developed through in-depth interviews with other children and young people.

The results capture the children’s own thinking about their lives and what is important to them. Understanding this information will help health care professionals plan and provide the right rehabilitation, education and social services, as well as shaping medical treatment and services. The questionnaire could also be used to profile the impact of visual impairment on children and young people, particularly at key stages in their lives, such as the move from primary to secondary school.

Guide Dogs routinely screens its 85 stud dogs using ultrasound to monitor their prostate health (male working guide dogs do not suffer from the same diseases because they have been neutered). In men, urination habits appear to be affected by prostate disease – so the Canine Research Team are examining whether there are clinical signs of prostate disease in dogs similar to those reported in human males. If there are, this will give us another source of information about possible signs of the disease.

To assess the urination patterns in our stud dogs, the team have designed a questionnaire for the stud dog holder to complete, which includes questions on the dog’s sleeping area, opportunities to urinate, urination overnight, urination frequency and flow and drinking habits. The results will be compared between dogs that have signs of prostate disease on ultrasound examination and those that do not to determine whether there are any positive indications of the disease.
The impact of an attack on a guide dog by another dog is devastating and, unfortunately, the number of attacks reported to Guide Dogs appears to be rising.

Our latest research shows that within a 23-month period, the number of reported attacks on guide dogs rose from three a month to over eight a month. This is of major concern to us for several reasons: the physical and emotional effects on both dog and owner, which can be long-lasting; the impact on the guide dog owner's quality of life and mobility if the guide dog is undergoing veterinary treatment and is unable to work; and the estimated financial costs to Guide Dogs of veterinary care, dog rehabilitation and dogs withdrawn from work which has been estimated to be close to £209,000.00 during the period.

Our Canine Research Team is starting a new piece of research to investigate further the nature and cause of dog attacks on guide dogs. This should enhance the wellbeing of working dogs and their owners and save Guide Dogs significant costs and resources. The ultimate aim is to prevent attacks happening.

The research will consist of four parts:
• Identifying the practical and emotional effects of guide dog attacks on the guide dog owner, which will help increase our understanding of the impact of an attack on the person's mobility and wellbeing.
• Examining dog to dog communication processes, in particular comparing the greeting behaviours shown between two unfamiliar dogs and those of an unfamiliar dog with a working guide dog.
• Comparing the incidence of dog attacks within the assistance dog and pet dog populations in the UK to see whether the number of attacks on assistance dogs is disproportionate to the number on pet dogs.
• Investigating activities and products which might support positive interventions during dog attacks and prevent risks to the health of both the guide dog and its owner.
Professor Jugnoo Rahi is a consultant ophthalmologist at Great Ormond Street Hospital and clinical Professor of Ophthalmic Epidemiology at the Institute of Child Health, University College London. Her research focuses on paediatric eye disease, childhood visual impairment and its effects into adulthood.

Professor Rahi has also dedicated over 10 years to Guide Dogs as a scientific advisor to the Ophthalmic Research Advisory Group.

1. How did you become involved in your particular field of research?
The first interest came when I was about half way through my surgical training and I started to think about research options. I was able to spend six months in India looking at the causes of childhood blindness. I then did a Masters in Epidemiology at the London School of Hygiene and Tropical Medicine and went onto study for my PhD at the Institute of Child Health, UCL.

2. What do you think have been the most significant breakthroughs in recent years?
Ophthalmic epidemiology is a really young discipline that has grown rapidly over the last few decades. But it’s been great to see how quickly it’s had an impact on some of the major causes of blindness, ranging from clinical trials in retinopathy of prematurity and age related macular degeneration to epidemiological studies identifying genetic and lifestyle risk factors for myopia.

3. What is the most unexpected thing you have learned?
We always expect the unexpected as lots of our research is uncharted territory for ophthalmology. We have found that people are very willing to contribute to large scale studies and so we have been able to do these on a national level and had success in getting people to buy into the principles. Epidemiology is a broad church and because it’s about looking at things on a larger scale, you can avoid the errors of smaller scale studies.

4. What are the highlights of your time working with Guide Dogs?
We’ve been fortunate to get funding from Guide Dogs on a number of occasions. The work we have done recently developing an instrument for children with sight loss to assess their own quality of life has been very important. It was very much developed with the intention that it should be used by people who are developing services for children who are visually impaired.

5. What is the focus of your next research project?
In the past few months we’ve had major funding to undertake research on myopia using the UK Biobank Cohort study, which means we can extend the work we’ve been doing looking at the risk factors for myopia other than specific ‘eye’ factors. The parallel I would draw would be with obesity, a condition with genetic as well as other environmental and lifestyle causes. We are also very excited about taking forward a very large scale study of risk factors for squint within the new UK birth cohort study, as this will be the largest study of its kind on this common condition affecting children.
About The Guide Dogs for the Blind Association:
The Guide Dogs for the Blind Association is a British charitable organisation founded in 1934. Guide Dogs provides independence and freedom to thousands of blind and partially sighted people across the UK through the provision of guide dogs, mobility and other rehabilitation services. It also campaigns passionately for the rights of those with visual impairments. Guide Dogs is working towards a society in which blind and partially sighted people enjoy the same freedom of movement as everyone else.

If you would like to continue to receive this research newsletter, please complete the details below

Your details:
Name
Address
Tel: Post code:
Email:

Guide Dogs are always looking for help in other areas of our work. Please let us know if you would like more information by logging on to www.guidedogs.org.uk, or by telephoning 0870 240 6993 or by returning this tear off slip to the address below.

I am interested in hearing more about:

☐ Fundraising
☐ Volunteering
☐ Campaigns
☐ General News

Please return this slip to Jackie Brookes, Strategy & Research, Guide Dogs, Hillfields, Burghfield Common, Reading, RG7 3YG or email: Jackie.brookes@guidedogs.org.uk.