Be part of some ground-breaking research in dental occlusion

#### **Research volunteers required!**

Would you be willing to give up a small amount of time to help develop the evidence base for dental occlusion?

If so, read on

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# The Bruxy Pilot Study

A comparison of wear patterns created by two occlusal designs

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## The Bruxy Pilot Study

Aim: to determine whether a research model consisting of two dental splints of different occlusal design (worn for up to 4 weeks each) can successfully be used to demonstrate differential wear patterns on healthy subjects

#### Background

The main research team comprises two very experienced restorative dentists and two experts in the field of biomechanics.

Ron Presswood taught with Dr. Henry Tanner for over 20 years and has broken new ground in the study of dental occlusion. Drs. Steph Forrester and Matt Pain both have high level degrees in engineering. The purpose of their work is to investigate the role of occlusion in oral health and function. They hope to make a significant contribution to the evidence base for an area of dentistry that, in the past, has relied primarily on opinion.

The team have developed a world-class expertise in the measurement of masticatory muscle function using the most up to date EMG techniques. They now want to investigate the possible link between occlusion and bruxism. The first step in this process is to pilot a method for measuring differences in wear on specially constructed occlusal splints. If this method is found to be successful they can apply for major grant funding to extend the study.

By participating in this study, we expect you to enhance your knowledge in this fascinating area of dentistry – thereby improving your ability to provide high quality care for patients in the future.

### **Previous Work**

Is there such a thing as a healthy occlusion? Presswood and Toy, Journal of Primary Dental Care, April 2008

Effect of occlusal conditions on neuromuscular function for a healthy population Forrester, Presswood, Toy & Pain – in production

Occlusal Indicators Can Affect Neuromuscular Function of Masseter

Forrester, Presswood, Toy & Pain - in production

Plus numerous opinion & review articles by Ron Presswood see www.pgocclusion.com



Some of the research team in action (l to r): Ron Presswood, Larry Browne, Graham Roy, Chris Parte, Jon Bill







#### An image from a test scan of two splint surfaces

## Methodology Outline 1

- Select 8 subjects free from TMD symptoms and excessive occlusal wear
- 2. Construct two dental splints of different occlusal design
- 3. Randomly assign order of wear
- 4. At fit visit, take EMGs of masseter and temporalis muscles, clinical photos and digitally scan the occlusal surface of the splint

## Methodology Outline 2

- Wear splint for 4 weeks. On return, repeat EMGs,
   photos and digital scan. Record subjective
   experiences
- 6 'Rest' for 4 weeks and repeat stage 4 & 5 with the other splint design
- Compare the digital scans of the different occlusal
   designs to determine differences in amount and
   pattern of wear

## **Risks & Benefits 1**

#### • Risks

- Some of your weekend time
  - 30 minute visit for PVS impressions
  - 1 hour visit to check splint fit
  - 2 hour visit for first splint fit, EMGs etc
  - 1 hour visit to return splint 1, EMGs etc
  - 2 hour visit for second splint fit, EMGs etc
  - 1 hour visit to return splint 2, EMGs etc
- Pain & dysfunction or just fed up? Just take the splint out and report to the research team
- Exposure to acrylic monomer not suitable for those allergic to this substance

## **Risks & Benefits 2**

- Benefits
  - Gain an appreciation of what it feels like to wear an occlusal splint
  - Work with some of the leaders in occlusion research
  - Make a contribution to the evidence base for dental occlusion
  - CPD day with the Research Team to hear the results and discuss the study

CET A WARINI CLOWING FEELING INSIDE AND A STORY TO TELL YOUR CRANDCHILDREN

## Where, What, When 1

All research visits will take place at

Gorse Covert Dental Practice 34 Maxwell Drive Loughborough LE11 4RZ



## Where, What, When 2

Visit 1	<ul> <li>Screen for TMD &amp; wear</li> <li>Impressions for splint – 30 mins</li> </ul>	A convenient date in Nov 09
Visit 2	• Initial fit splints 1 & 2 – 1 hour	A convenient date in Dec 09
Visit 3	• Fit splint 1 • Take EMGs etc – 2 hours	Weekend 23/24 <sup>th</sup> Jan 2010
Visit 4	• Return splint 1, 4 weeks' later • Take EMGs etc – 1 hour	Saturday 20 <sup>th</sup> Feb 2010
Visit 5	• Fit splint 2, 4 weeks' later • Take EMGs etc – 2 hours	Weekend 20/21 <sup>st</sup> Mar 2010
Visit 6	• Return splint 1, 4 weeks' later • Take EMGs etc – 1 hour	Saturday 17 <sup>th</sup> April 2010
CPD	• CPD day with the research team	tbc

#### Your next step

If you'd like to register your interest or know more about the project, please contact Andy Toy on:

- <u>andy.toy@talk21.com</u>
- 07740 421 390

We look forward to hearing from you!