Sarah Day, University of Strathclyde publishes the Arabic translation of the Prosthesis Evaluation Questionnaire – Faculty Reflection.

In recent years there has been increasing pressure for allied health professionals to provide evidence to support the clinical decisions that they make. Evidence based practice is now a vital part of allied healthcare, as it is used in patient care decisions, practice management, research and continued professional development (CPD). Outcome Measurement Tools (OMTs) are often used as part of evidence based practice. An OMT provides a standardised method of measuring, allowing easier monitoring of a patient’s progress. OMTs can also be used when comparing the performance of different patients, practitioners or treatment methods.

Importance of proper translation

The majority of Outcome Measurement Tools available for use in prosthetics have been developed and tested in the English language. If these tools are to be used with a different population it is important that the tool is adapted to suit the needs of the new population and then retested to ensure that its properties remain. It is not sufficient to directly translate a tool from the original source language into the new target language, as errors will be introduced which distort the intent of the tool, affecting its quality and effectiveness.

Methods for translation

The adapted tool should ask the same questions and offer the same response options as the original version, whilst being sympathetic to the local cultural environment. There are many different techniques which can be used to achieve this. Both Guilleman and The World Health Organisation (WHO) recommend that the technique should include the following steps;

1. **Forward translation** - Forward translation is where the tool is translated from the source language to the target language by a bilingual translator whose mother tongue is the target language. Instructions should be given to the translator to emphasise conceptual rather than literal translation, and to use natural and acceptable language suitable for the target population.

2. **Back-translation** - Back translation is where the tool is translated from the target language back to the source language by a translator whose mother tongue is the source language, and who has no prior knowledge of the tool.

/Continued on page 2
Faculty reflection:
/Continued from page 1.
3. Expert panel – a bilingual expert panel reviews the translations, discusses any discrepancies between versions and reaches group consensus. The expert panel will agree on a complete translated version of the questionnaire.
4. Pre-testing and cognitive interviewing – the new tool should be pre-tested on the target population. The subjects understanding of the items in the tool should be measured and their responses to the items should be compared to their actual performance.
5. Final version – following completion of all these checking steps, the final version of the tool can be produced.

Translation of the PEQ into Arabic
Permission was granted by the Prosthetic Research Study group (PRS) to translate the PEQ into Arabic. The PEQ was then culturally and linguistically adapted from English to Arabic using a process of forward translation, backward translation, committee review and pre-testing. Ethical approval for this study was granted by King Fahad Medical City Internal Review Board (KFMC IRB) and University of Strathclyde Ethical Committee.
The translation team consisted of 2 native Arabic speaking translators, 3 content experts, one native English speaking healthcare professional, the Primary Investigator and one Arabic speaking non-medical person. The translation method used was a modification of the method described by Guilleman (1993). Pre-testing was carried out in a clinical trial where subjects each completed the questionnaire in Arabic and English, and underwent random probe questioning. Data was collected from 7 subjects over eight months between February and September 2009.
The data was compared and analysed, using SPSS software. The nine PEQ scales were each tested using Inter-class Correlation (ICC) and Bland Altman Plots. The results of the analysis showed that the Arabic version of the PEQ was linguistically equivalent to the original version, although further testing with a larger sample group is recommended.

Summary
Validated outcome measurement tools are useful in clinical practice and research, but care must be taken when using a tool with a population other than the population it was designed for. When translating a tool it is important to aim for conceptual rather than literal translation, and to check that the new tool has retained the properties of the original version.

Other P&O Outcome Measurement Tools

<table>
<thead>
<tr>
<th>Outcome Measurement Tool</th>
<th>Available languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEQ</td>
<td>English, French, Arabic</td>
</tr>
<tr>
<td>Prosthetic Profile of the Amputee (PPA)</td>
<td>French, English, Dutch, Italian, Spanish, Portuguese, Persian</td>
</tr>
<tr>
<td>Locomotor Capabilities Index (LCI)</td>
<td>French, English, Dutch, Italian, Spanish, Portuguese, Persian, Swedish</td>
</tr>
<tr>
<td>Orthotic and Prosthetics Users' Survey (OPUS)</td>
<td>English, Swedish, Spanish, Slovenian</td>
</tr>
<tr>
<td>TAPES</td>
<td>English, Italian, Portuguese, Swedish, Khmer</td>
</tr>
<tr>
<td>Short Form 36 (SF-36) Health Study</td>
<td>English (Australia, Canada, UK, USA), Belgian, Danish, French, German, Italian, Japanese, Dutch, Norwegian, Spanish (Spain, USA). Translated versions for use in more than 40 other countries, including: Argentina, Armenia, Austria, Bangladesh, Brazil, Bulgaria, Cambodia, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Finland, Greece, Guatemala, Honduras, Hong Kong, Hungary, Iceland, Israel, Korea, Latvia, Lithuania, Mexico, New Zealand, Peru, Poland, Portugal, Romania, Russia, Singapore, Slovak Republic, South Africa, Switzerland, Taiwan, Tanzania, Turkey, the United Kingdom (Welsh), the United States (Chinese, Japanese, Vietnamese), Uruguay, Venezuela, and Yugoslavia.</td>
</tr>
</tbody>
</table>

Key References:

Details of this study have been published in:
Day SJ, Buis A. Cross cultural equivalence testing of the Prosthetic Evaluation Questionnaire (PEQ) for an Arabic speaking population. Prosthetics and Orthotics International. 2012 Jun; 36(2) 173-180
“Meet Kazuki Fujimoto, a fourth year student in the 4 year Prosthetics & Orthotics program at the Kobe College of Medical Welfare, Sanda campus. Kazuki will be one of the first ISPO Category I certified students to graduate from this college following its recent evaluation and recognition by ISPO as an approved ISPO Category I program for professional training of prosthetists/orthotists. At first glance, Kazuki seems like your average student; he learned about the field when he got a sports injury as a child. He likes Rock and Roll music. Like other students he sometimes struggles through exams and practical sessions, and so on. However, he is far from your average student.

Kazuki has already decided where he would like to work after he graduates. He has already spoken to the owner and CEO of a prosthetics & orthotics company. He chose this company for one specific reason: he wants to build upon the relations between Japan’s prosthetics & orthotics field and the rest of the world this making this company ideal as they encourage international contact through foreign and domestic conferences and scientific meetings.

Indeed, Kazuki has already begun this internationalization process. Two years ago, Kazuki attended an international Prosthetics & Orthotics conference in Osaka. There he introduced himself to many conference lecturers and speakers. He was especially interested in an American prosthetics & orthotics company that presented an “objective assessment tool” for trans-tibial amputee clients. At this time, Kazuki dedicated himself to learn English properly and during his 2011-2012 winter holiday, Kazuki went to the US to visit this and many other P&O companies. Kazuki describes the experience as “stimulating, informative and motivational”. He didn’t stop there! He then proceeded to rigorously study English so as to augment his TOEIC score in order qualify for a government subsidy through his college attend Mahidol University in Thailand as a short term foreign exchange student for their Prosthetics & Orthotics program. Finally after months of intensive English studies, he succeeded! He was therefore granted government funding and went to Mahidol University during his 2012 summer holiday.

Kazuki promises to continue studying English in the hope of further internationalization and international exchange. I believe that we should keep a good eye on this young but wise and dedicated future ISPO Category I qualified professional”.

Fujimoto at his summer placement in Thailand at the University of Mahidol

by Mitsuhiko Uchida, Kobe College of Medical Welfare
I call my challenges “the big triangle challenge” for they are challenges that are three dimensional. To begin with, I am an Orthopaedic Technologist (ISPO Category II) who has been practicing for about 23 years. I’m a father of three: two youths and a teenager. Three years ago I was appointed as Head of the Orthopaedic Technology Department in a hospital that is the second largest South of Sahara and north of Limpopo, namely Kenyatta National Hospital in Nairobi, Kenya, and now I am a student in Kilimanjaro Christian University College under the kind scholarship of USAID/ISPO.

Most of my classmates are slightly less than half my age. The challenge comes that as a student I am supposed to shelve all the other responsibilities and concentrate on learning as the cardinal issue to be addressed. I had for years longed to serve my vision for the development of our profession in this hospital and this must be kept alive as I expect to go back and improve it even more. This, therefore, keeps me in constant consultation to make sure our objectives as a department are followed to help us realize our vision.

The second challenge, as a father of the youths is that my communications with them gives the direction that they continuously need from me as their Daddy. Thanks to my wife Caro as she tries to keep them in check.

The third challenge is the education side where I am with very bright young students who were chosen to join this class of prosthetics/orthotics on merit. My classmates are quick in their understanding of lectures, forcing me to study up to the wee hours of the night in order to keep up (Their standard that is obviously way beyond average). My pledge to my sponsor was to do my best and I have no options but to do that. I want to give special thanks to the entire membership and family of ISPO for their kind consideration, for this will go a long way in improving the practice of Prosthetics/Orthotics not only in my country Kenya but to the world at large. As I struggle to address my three fold challenges I want to confirm my commitment to resolve them all and further request future consideration of more Kenyans to join this very important course that is a direct service to humanity. I am full of joy because I know that even my hospital is a big beneficiary to my future success in this course, as well as my family and my classmates who

Comment from the ISPO Grant Manager:

John’s beloved country is Kenya which is a country with a population of 39,802,000 and is a classed as a low income country by the World Bank. This means a Gross National Income per capita < US$1,025.

Like many of our students on ISPO programs, John and his peers shown on page 5, Le Ngoc Hoan and Amit Ratna Bajracharya, are mature students who have a real passion for our field of prosthetics and orthotics. While they have valuable experience of working in the field they recognise the need for advanced study to be able to improve national services for persons with disabilities. I think their commitment and that of their families and employers in releasing them to study in another country is amazing.
Vietnamese student profile  I’m Le Ngoc Hoan (shown right) from Vietnam, a 3rd year student at Sirindhorn School of Prosthetics and Orthotics (SSPO), Mahidol University, Thailand. I worked at the Rehabilitation Center, Bach Mai University Hospital in Vietnam since 2000 as a Prosthetics & Orthotics Technician before I was selected to undergo formal training on the Bachelor program in prosthetics and orthotics at SSPO on a Nippon funded scholarship. Studying at SSPO is helping me to improve my knowledge as well as skills. I am also able to learn from other students from the program, and these contacts will be my future professional colleagues.

It has been a privilege to work with people with disabilities. There is an enormous need to develop the field of prosthetics and orthotics in Vietnam because of the high number of people with disabilities there. I needed more training in order to treat my patients with confidence. I will soon complete my training course and return to work at Bach Mai University Hospital to develop prosthetics and orthotics education, services, and improve quality of care for people with disabilities. Our hospital also provides training for provincial centers throughout Vietnam. Once graduated, I will be one of key trainers. My degree will also ensure that I can help provide a higher quality of care, training and management of the Prosthetist/Orthotist profession in Vietnam.

SSPO – A golden gate to enter the Prosthetist/Orthotist profession

An 11 year old boy in school uniform with a bag on his back walked quickly to catch the school bus. Beside him, another 11 year old boy always wondered “what is so different about him?” Why does he wear an unmatched weird kind of shoes with metals and spring?” It took 11 years more for that boy to realize that the other boy wore an assistive device. It is at the age of 22 when I came to know he was wearing an assistive device due to polio because I decided to study prosthetics and orthotics. He was my schoolmate and this is one memory that lodged in my childhood mind because it was the first time I saw someone differently able. He is 36 years old now, has had corrective surgery and walks without KAFO. Years have passed and time has changed but still the situation has not changed much. The majority of people are still not familiar with rehabilitation services or the prosthetist orthotist profession in my country.

I am Amit Ratna Bajracharya (below) from the land of Buddha and Mount Everest, Nepal where the geography varies and it is the paradise of nature but sadly, on other hand, we have had the pain of internal armed conflict for nearly 12 years. The population of the country is 26,494,405. Recently the government of Nepal, national planning commission reported the population of people with a disability to be 1.94%, 36.32% of whom having a physical disability. It is obvious to suppose that the armed conflict which this economically poor country went through added to the number of people with physical disability. I graduated with a Bachelor in Prosthetics and Orthotics from Patna, India and joined the Nepal Army Rehabilitation Centre as a prosthetics/orthotics specialist for the initial phase of establishing the center. After 6 years of work experience in Nepal, here I am studying at SSPO, in Bangkok to enhance my skills and knowledge with their ISPO Category I recognised program. During my experience at the Nepal Army Rehabilitation Center, a private workshop and the initiation of the prosthetic orthotic society Nepal, I found that we lacked qualified professionals and exposure to an international network to exchange knowledge and skills. The profession itself is not recognized at government level in Nepal. The biggest advantage of being on an international course is that we share experiences of the profession with each other from our respective countries. This broadens our views and personally, it gives me a crystal view of my future plan for my country.
ISPO World Congress,
Hyderabad, India 4 – 7 Feb 2013

Over 1,800 participants from 85 countries came together for
ISPO’s latest World Congress. The congress was opened with a
ceremony that included a Keynote Speech by Carson Harte of the
Cambodia Trust who shared insights about the prodigious
progress and momentum of recognition of ISPO Category I & II
educational programs around the world that were embedded,
because of the use of the ISPO/WHO guidelines for training (see
LINK).

The scientific program was packed with 6 parallel sessions and
an exhibition where 127 exhibitors showcased the latest
technologies in the field of prosthetics and orthotics. This
multidisciplinary gathering was well attended by employers,
managers, service providers, clinicians, researchers and students.
It was heartening to find that a number of students and recent
graduates contributed to the program through oral and poster
presentations which were of high quality and well received.

A series of Instructional Courses and Symposium over the four
congress days proved to be a rich source of learning for attendees
who wanted to keep abreast of recent clinical and technical
practice. In addition, Exhibitor Workshops provided a very
informative forum for product demonstrations. Instructional
courses and symposium. Exhibitor Workshops enabled
delegates to learn about a topic in more depth, ask questions of
the experts in the field and seek practical advice about how to
implement such methods and technologies into their own
clinical and management practice. Visit www.ispoint.org for
more detailed information about the congress. Our next World
congresses are in Lyon, France in June 2015 and Cape Town,
South Africa in 2017. Student members welcome!!!

Introducing our guest editorial…

One morning when in India, I arrived early to put something on our ISPO exhibition stand. On the way and in the calm
before the busy day ahead I decided to take some quiet moments to read some of the scientific posters. Someone else
evidently had the same idea as I had a chance meeting with Professor Peter Kyberd in the poster area. Prof Kyberd is a
renowned researcher and upper limb specialist and a very approachable person.

We got chatting and I asked if Prof. Kyberd would be able to write a piece for this newsletter about assessment and upper
limb prosthetics. This followed my increasing awareness of the need for information about upper limb prosthetics in the
field among ISPO certified graduates. Amazingly, in his busy schedule Prof. Kyberd has already provided this excellent
piece providing insights and advice about Assessment in Prosthetics and also Upper Limb Prosthetic Outcome Measures.

It is not just the formal presentations that are important at congress. The networking opportunities we have as participants
are amazing! We are very fortunate to have such a member’s society as ISPO.

The guest editorial ties in very well with the front page Faculty Reflection piece from Sarah Day who teaches on the
ISPO Category I recognised course at the University of Strathclyde.

Students and graduates alike will appreciate this content and I have included it in its entirety – since the newsletter is
circulated by PDF it is a good way to let you all see it. You may also be interested to know about a triennial symposium
that will be of special interest to those who work in the field of upper limb prosthetics, which Prof. Kyberd is hosting at
the University of New Brunswick. The event is MEC’14: Redefining the Norm August 18 – 22, 2014. Additional
information may be obtained from www.unb.ca/conferences/mec.

Sandy
Mrs Sandra Sexton, ISPO Grant Manager
Guest Editorial: Assessment in Prosthetics

Peter J Kyberd PhD,
Vice President's Research Chair in Rehabilitation Cybernetics,
Institute of Biomedical Engineering,
University of New Brunswick, Canada

Introduction

One important aspect of creating or using a process or technique to improve peoples' lives is to be able to measure if the intervention has succeeded. This means that the practitioner knows their work is useful, but it also can mean that one can justify the expense of the process or device to funders or providers. Basically, in prosthetics, if you want to fit an arm to a person, you need to be sure they are better off with it, but also any agency who paid for it, needs to know they are getting value for their money. Additionally, if it is a new idea or design one must answer the simple question: Does it work?

One key phrase above is: "you need to be sure they are better off with it". The big question is; "better off, how?" This is hard to answer and it depends on your perspective. If you are the government with a program to help the injured to get back to work, then being able to do a job (perhaps any job) is success for you. If you are a prosthetist, then success may well be a comfortable device that the person can use. A therapist may be more interested in how they can use the arm easily and fluidly, but the user themselves may just want something that fills their sleeve and makes them less noticeable, or many of the other reasons above as well. The important thing is that to know any of the above things, you would need to measure them in some way, and it might be clear that it is almost impossible to measure all of those things with the same tool. It would be like trying to measure the size of a car with a jug used to measure water for cooking. You could learn something about the size of the car by using the jug, but a better tool would be a ruler. The jug would be good at measuring the fuel in the tank, the ruler less so.

WHO - ICF

In prosthetics it is similar, we can measure how quickly someone is performing a task, but that will not tell us if the user is happy with their leg. This is why it is useful to adopt the World Health Organisation's International Classification of Functioning, Disability and Health (WHO-ICF). When it was developed, it aimed to create a single language to be used by different professional groups to describe health and health related status to make communication between professionals, groups and countries, simpler, removing ambiguities. The ICF divides human functioning into four components: 'Body Functions and Structures', ‘Activities and Participation’, ‘Environmental Factors’ and ‘Personal Factors’. Each component is part of the process of creating, supplying and using interventions for persons with impairments. A group of professionals in upper limb prosthetics, the Upper Limb Prosthetics Outcome Measures group (UPLOM), adopted this format to help them determine which tools could be used to measure the outcomes when someone is fitted with a prosthesis.

The WHO considered prosthetic limbs as 'assistive devices' and they are, thus, covered by the component ‘Environmental Factors’. However, as with other assistive devices like wheelchairs, when they are used all the time they become part of the users’ body image. This is not acknowledged by the ICF they ignore the experience of the profession. The ULPOM has made the suggestion that, as the prosthesis is a replacement of a body part and considered as such by most of its users, when studying the outcome of upper limb prosthetics it should be regarded as part of the ‘Body Functions and Structures’ domain. For prosthetics this domain captures the performance of the device itself, the speeds, strength and power of the device. The ‘Activities’ domain looks at how the device can be used, which tasks a person can do with their prosthesis. Such as picking up
objects or using it to make a meal. The 'Participation' domain looks at how the prosthesis is really used, by the wearing public every day.

One thing that may be coming clear is that different tools are need for the different domains. For Function, one can measure the speeds and forces in the lab or workshop using simple engineering tools. With Activity, then it can be seen that the user of a prosthesis must be performing a task when we measure aspect. Finally, measuring how the device is really used would require the user to be recorded during their normal life. One simpler alternative to this is to ask the user themselves, thus Participation based measures are generally questionnaires.

**Tool design**

One important fact is; how can one measure an activity? It is easy with speed or mass or length, we have well known tools to do this. In fact they have been designed to be able to measure this reliably. If you did not know how to use a ruler to measure length (not knowing about the little bit at the end beyond the zero mark), you might consistently get the wrong distance. Indeed, even if you knew about this, but were given a ruler 3 metres long to measure a 3mm object, you may well measure that inaccurately. Additionally, if the marks on the ruler were in a different language, or were in some other measuring system, you would not easily be able to work out how big something was, or be able to tell someone in the shop how much wood you needed, if they only knew about metres, and you had the lengths in feet. So what is important is to design a tool that is easy to use and where you know what the results mean.

This is the difficult part of designing a tool to assess the outcomes of a prosthetic fitting. If you say that you will get everyone to do the same two activities, you must be sure that the results (say the time to completion) tell you what you want to know. Is the first person slower because he is poorer with his prosthesis, or because it just moves more slowly? You also want to be sure that the measurement means the same if you do it today as tomorrow (it is repeatable) and if I set the test for this person, or you do (its inter-rater quality is good). If the person improves over time, will you be able to measure that? If so how small a change can you measure? Finally, if the tool measures a difference, is it a difference in the prosthesis or fitting, and not simply some other factor, like the person is an older hand, has much more practice or experience, or just lived longer and seen more ways to perform this task? Any valid tool should be able to cope with these and detect only differences that mean something. The qualities I have described are known as the psychometric properties of a test.

To test the psychometric properties one has to perform the test with different people at different times, so that the results that should be the same are seen to be the same, and those that should be different are shown to be different. While it is quite easy to be sure that a ruler can measure lengths up to 30cm simply and reliably, you would only need to ask a few people to measure some standard lengths and check they got them right. With a prosthetics assessment tool this is much harder. Once you have designed a tool you have to test it on many people, both users and assessors to make sure it is consistent, repeatable and measures what you want it to. With length you can compare your new ruler with an old one that you know works, but with hand function there are no 'gold standards' with which you can compare, so you have to devise ways to check this.

From this you can see that the process to develop a new assessment tool is long and requires patience. Virginia Wright of Toronto estimated that for full validation of a new tool takes about 10 years. It was for these reasons that the ULPOM tried to find tools that have been developed for measuring hand function in other areas, or ones designed for prostheses, but not fully validated and suggest ways to go about completing the process. Their eventual goal is to have identified a range of tools that one can use and a common language, so that even if I make an assessment on one side of the world, I can be confident that you on the other side will understand the result and we can talk and exchange ideas and opinions. So far, they have identified those tools that one can already use, along with the ones that are close to being usable, just needing a few simple tests to bring them along. Right now they are conducting tests to validate these second set of tools.

What are the barriers to validating the tools? This depends on the type of tool. The functional tests are basically very simple and engineering based so can be standardised easily. The Activity tests are based on daily activities. These can be cultural, so
that one may be familiar with one activity and have performed it often, while others might be quite alien to them. One example might be the ability to sit on the floor using a leg prosthesis. In some cultures this is essential; in others it would hardly be considered a necessary request. For Participation this translation of ideas is even greater. If you wish to set a questionnaire, you need to be sure that what you and I mean about a particular word is actually the same. I am an Englishman living in Canada, what my colleagues want when they ask for a *muffin* is very different to what I want when I pose the same question. So care must be taken in translating one tool into another language. This is true for the instructions for any test as well as a questionnaire. The best way to test that you have translated the meaning correctly is to take two completely unconnected people, who are native speakers in the target languages and get the first to translate the test into their own language, then the second translator must take the translation and turn it back into the original text. Any loss of meaning should become very clear at this point. In fact this process should happen several times to make sure it is correct.

**Tools to use: Upper Limb Prosthetic Outcome Measures (ULPOM)**

The aim of the ULPOM group was not to prescribe the choice of tests, but to make suggestions about two or three of many tests that the clinic or user can employ, and leave the choice to clinicians. So there are several tests suggested for each of the three categories. The following table is the result of the UPLOM survey of all the literature in English. They have identified which tools already have sufficient psychometric quality to be used, as well as a group that need only some additional testing to be acceptable. They range from the expensive (such as the SHAP or Jebsen) to the cheaper, such as the Box and Blocks. Readers are encouraged to use valid tools that fit in with their practice and habits.

Table 1 – ULPOM Recommendations

<table>
<thead>
<tr>
<th>ICF Domain</th>
<th>Accept</th>
<th>Consider</th>
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</thead>
<tbody>
<tr>
<td>Function</td>
<td>SHAP (a)</td>
<td>Box and Blocks (a,p)</td>
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<td></td>
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<td>Sollerman (a,p)</td>
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<td>Michigan Hand Questionnaire (a)</td>
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<tr>
<td>Activity</td>
<td>AMC (a,p)</td>
<td>UNB Test (p)</td>
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<td></td>
<td>PODCI/POSNA (p)</td>
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<td></td>
<td></td>
<td>CAPP-PSI (p)</td>
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<td>Participation</td>
<td>COPM (a,p)</td>
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<tr>
<td></td>
<td>Goal Attainment Scaling (a,p)</td>
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</table>

* a – primarily intended for adult population
  p – primarily intended for paediatric population

To take this further, the reader is recommended to read the following literature:


**Acronym list**

- **AHA** - Assisting Hand Assessment
- **ACMC** - Assessment of Capacity for Myoelectric Control
- **CHQ** - Child Health Questionnaire
- **COPM** - Canadian Occupational Performance Measure
- **CAPP, PSI** - Child Amputee Prosthetics Project, Prosthesis Satisfaction Inventory
- **DASH** - Disability of the Arm -Shoulder -and Hand Measure
- **GAS** - Goal Attainment Scaling
- **ICF** - International Classification of Functioning Disability and Health
- **Jebsen** - Jebsen Standardized Test of Hand Function
- **OPUS** - Orthotics and Prosthetics User Survey
- **PedsQL** - Paediatric Quality of Life Inventory
- **PODCI** - Paediatric Outcomes Data Collection Instrument;
- **POSNA** - Pediatric Orthopaedic Society of North America;
- **PUFI** - Prosthetic Upper Extremity Functional Index
- **SHAP** - Southampton Hand Assessment Procedure
- **Sollerman** - Sollerman Hand Function Test
- **TAPES** - Trinity Amputation and Prosthetic Experience Scales
- **UBET** - Unilateral Below Elbow-Test
- **UNB** Test - University of New Brunswick Test of Prosthetic Function
- **UEFS** - Upper Extremity Functional Status
- **WHOQOL** - World Health Organization Quality of Life

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**The P & O Scholar**

This newsletter is a twice yearly newsletter connecting prosthetics and orthotics students and graduates around the world who attend ISPO recognised programs for student prosthetists/orthotists (ISPO Category I) and orthopaedic technologists (ISPO Category II). Students, recent graduates and faculty of ISPO programs are encouraged to submit articles, share news and stories and exchange information. Articles, pictures and news to Sandra Sexton, ISPO Grant Manager - Email: sandra@ispoint.org.

Please ensure that you have consent to share any images for this newsletter. **Deadline for Edition 4 is 15 June 2013**