

# Ultrasound, bleeds, joints and sport

Bianca Da Silva

**Musculoskeletal workshop 1:  
In-depth joint ultrasound imaging:  
Hands-on workshop**

Moderator ~ Cindy Bailey, USA

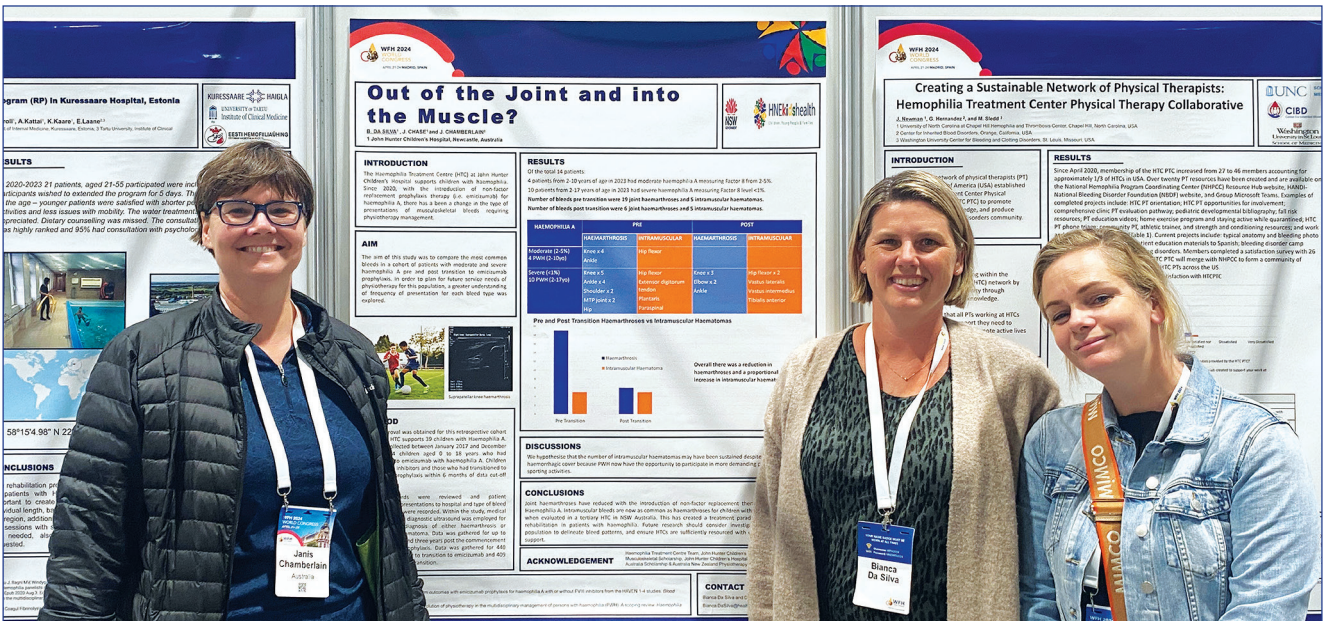
Speakers ~ Eric Chang, USA; Carlo Martinoli, Italy; Annette von Drygalski, USA  
And laboratory instructors and panellists

My first day at WFH 2024 World Congress consisted of a full day ultrasound workshop at the Professional Development Day, with the focus on teaching how to detect the presence or absence of a bleed (largely in the joint spaces) using point-of-care ultrasound (PoCUS), which is used routinely in some Haemophilia Treatment Centres in the United States of America.

PoCUS is done at the bedside (i.e., point of care) by using portable ultrasound equipment to support a clinical assessment, with the idea that pain can be used in early identification to detect the presence or absence of a bleed. It does not replace current

imaging that Haemophilia Treatment Centres are currently using such as ultrasound, CT or MRI that are performed by radiologists. It was demonstrated that it can also be used in the clinical setting to monitor the progression of a bleed, and how to use doppler imaging to assist with clinical decision making in whether a person with a bleeding disorder can consider returning to sporting activity.

There was a particular focus on hands-on practice and teaching, with a number of skilled haematologists and physiotherapists/physical therapists teaching small groups how to use different musculoskeletal placements of the ultrasound transducer to identify bony and soft tissue landmarks, and how it would theoretically look in the presence of a bleed. There was also discussion about the results of a recent pilot study performed by the University of California San Diego, where patients were trained to be able to remotely perform joint self-images using a portable ultrasound device guided by a clinician utilising Telehealth. This demonstrates a possibility and future direction for the use of ultrasound in haemophilia care.



L-R: Dr Janis Chamberlain, Bianca Da Silva and Jaime Chaise with their poster, 'Out of the joint and into the muscle'

### Out of the Joint and into the Muscle?

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2. University of California San Diego, San Diego, CA

**INTRODUCTION**  
The Hemophilia Treatment Center (HTC) at Lehigh Valley Children's Hospital supports children with hemophilia A (HTC) since the introduction of non-factor replacement therapies (NRF) in 2002. NRFs have led to a significant reduction in the risk of progression of musculoskeletal bleeds requiring physiotherapy management.

**AIM**  
The aim of this study was to compare the most common bleeds in a cohort of patients with moderate and severe hemophilia A and their transition to musculoskeletal bleeds, in order to plan for future service needs of physiotherapy for this population, a greater understanding of frequency of presentation for each bleed type was obtained.

**RESULTS**  
41 (81) patients (49% female) from 2017 to 2022 had moderate hemophilia A (measuring factor 8 from 2.5% to 5.0%) and 59 (99%) patients from 2017 to 2022 had severe hemophilia A (measuring factor 8 from <1% to 2.5%).  
Number of bleeds per transition were 19 joint haemarthroses and 18 intramuscular haematomas.

HEMARTHROSIS		INTRAMUSCULAR		POST	
HTC	HTC	HTC	HTC	HTC	HTC
Shoulder (15%)	Elbow (10%)	Thigh (10%)	Upper leg (10%)	Upper leg (2%)	Upper leg (2%)
Elbow (10%)	Upper leg (10%)	Upper leg (10%)	Upper leg (10%)	Upper leg (2%)	Upper leg (2%)
Upper leg (10%)	Upper leg (10%)	Upper leg (10%)	Upper leg (10%)	Upper leg (2%)	Upper leg (2%)
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**DISCUSSIONS**  
The high number of intramuscular haematomas may have been sustained despite hemophilia A carrier status in our patients. This has created a need for increased education in patients with hemophilia A and their families regarding the importance of identifying bleed patterns, and ensure HTCs are sufficiently resourced with staff.

**CONCLUSIONS**  
Non-factor replacement therapies have led to a significant reduction in the risk of progression of musculoskeletal bleeds requiring physiotherapy management. This has created a need for increased education in patients with hemophilia A and their families regarding the importance of identifying bleed patterns, and ensure HTCs are sufficiently resourced with staff.

**ACKNOWLEDGEMENT**  
The authors would like to thank the staff of the Lehigh Valley Children's Hospital and the University of California San Diego for their support and assistance in this study.

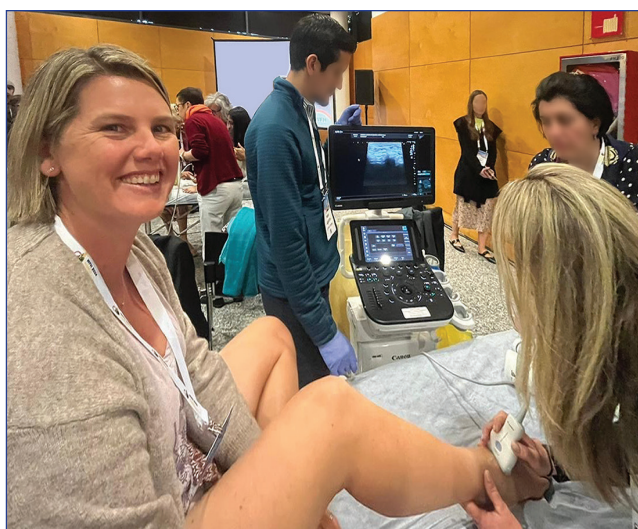
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### Creating a Sustainable Network of Physical Therapists: Hemophilia Treatment Center Physical Therapy Collaborative

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**INTRODUCTION**  
The network of physical therapists (PT) in the United States (USA) is critical to the physical therapy (PT) profession and the physical therapy (PT) profession is essential for the physical therapy (PT) profession. The network of physical therapists (PT) in the United States (USA) is critical to the physical therapy (PT) profession and the physical therapy (PT) profession is essential for the physical therapy (PT) profession.

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And then the Congress sessions began! There were different tracks/streams at the conference including medical, PWBD (people with bleeding disorders), MSK (musculoskeletal), dental, psychosocial, WGBD (women and girls with bleeding disorders), nurses and lab sciences. As a physiotherapist, I largely attended the musculoskeletal track, however there were a number of interesting sessions across the conference that regrettably I was unable to attend. This further reinforces the diversity of topics and different areas to consider in management of haemophilia as a person with a bleeding disorder or a clinician involved in patient care.

### **Musculoskeletal workshop 3: Optimizing musculoskeletal management for PWBD**

**Moderator** ~ Greig Blamey, Canada

**Speakers** ~ Adolfo Llinas, Colombia;  
Luigi Solimeno, Italy

*And discussion leaders*

An additional highlight during the conference was the optimising musculoskeletal management for people with bleeding disorders session. During this session, attendees were able to work in small

groups with a haematologist, orthopaedic surgeon and physiotherapist/physical therapist supporting each group as case studies were discussed, and then a greater discussion was conducted as a larger group. The ability to brainstorm and discuss cases with different clinicians from around the world was extremely valuable.

### **Game-changing health: Bridging new treatment, sports, and everyday living**

**Chair** ~ Cindy Bailey, USA

**Speakers** ~ Hazri Aris, Malaysia;  
Manuel Rodríguez López, Spain; Clive Smith, UK; Olaf Versloot, Netherlands

The final session on game changing health: bridging new treatment, sports and everyday living was uplifting. It reinforced the importance of working closely with people with bleeding disorders to support them to achieve their desired goals. Hazri Aris and Clive Smith shared their experiences and physical endeavours including their challenges, and reflected on the future and changes to treatments and what this may mean for people with bleeding disorders.

## **REFERENCES**

Aguero P, Barnes RFW, Flores A, von Drygalski A. Teleguidance for patient self-imaging of hemophilic joints using mobile ultrasound devices: a pilot study. *Journal of Ultrasound in Medicine* 2023 Mar; 42(3):701-712.

<https://doi.org/10.1002/jum.16084>

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*Photos: Bianca Da Silva*

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