

Addressing Intimacy & Sexuality: The Missing Conversation in Burn Care

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Disclosures



I have no relevant financial relationships or disclosures
to report related to this presentation.

By the End of This Session, You Will Be Able To:

1

Define intimacy

in a way that extends beyond the physical or sexual — grounded in connection, being seen, and being valued.

2

Define the Ex-PLISSIT model

and its role as a clinical framework for approaching these conversations with structure and confidence.

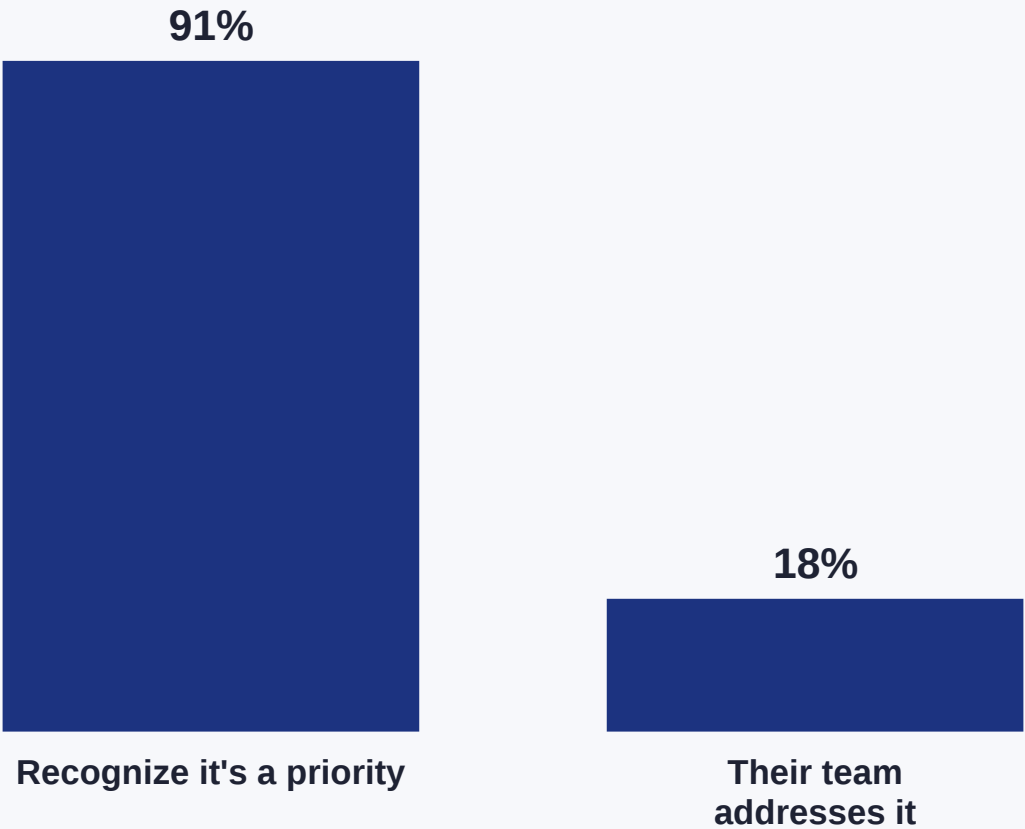
3

Articulate 1–2 conversation openers

you can use in your very next rehab session to give patients permission to talk about intimacy.

A 117-Respondent Survey of Burn Care Teams

Nurses, OT, PT, physicians, APPs, psychology, and social work — across the full multidisciplinary burn team



91%

of providers say addressing intimacy & sexuality is a priority need for burn survivors

18%

report their team actually addresses these concerns in practice

We Know It Matters. We Aren't Trained For It.



97%

report no institutional training is
available on this topic



6%

have sought out specialized training
independently



90%

say they would benefit from
education like today's session

What Do We Mean by "Intimacy"?

Intimacy is often aligned with sex. However, it is so much more than this.



Physical

Touch, closeness, sexual function and expression



Emotional

Being known, being vulnerable, being understood



Relational

Trust, safety, and connection with a partner or others

“

Intimacy, at its core, is about feeling connected, being truly seen, and knowing you are valued — exactly as you are now.

N2MEUC

“Into me you see” — intimacy is emotional connection, being seen by another, shared vulnerability.



Connection

A felt sense of closeness with another person



Being Seen

Letting your true self — scars included — be known



Being Valued

Feeling worthy of love and desire as you are

The Weight of a Changed Appearance

For most burn survivors, changed appearance is one of the most difficult parts of recovery — and it touches every relationship in their life.



Accepting It Themselves

Reconciling a changed body and sense of self can be as hard as any physical milestone in recovery.



Fear in a Relationship

Will my partner still see me the way they used to? Will they still want me?



Fear for the Future

For those not currently partnered: will anyone be okay with how I look now?

The Voice Inside: Self-Talk & Self-Image

How a patient talks to themselves — silently, in the mirror, in their head — shapes how they see their body long before they say a word to you.



Shapes Participation

Negative self-talk can quietly reduce engagement and draw a person into themselves.



Colors Self-Perception

Repeated negative self-statements reinforce a fixed, damaged sense of self over time.



Can Be Gently Interrupted

Naming a pattern out loud, without judgment, opens space for a different narrative to take hold.

WHAT YOU MIGHT HEAR

"I'm ruined."

"No one will want me looking like this."

"I have to hide this forever."

Your Clinical Framework: Ex-PLISSIT

Taylor & Davis (2006) — this model is perfect for ongoing rehab relationships to help create natural openings for meaningful conversation.



Cyclical, not linear — permission is re-offered and revisited at every level, every encounter.

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Cyclical, not linear — permission is re-offered and revisited at every level, every encounter.

Permission Is the Foundation



You don't need to wait for the patient to bring it up. A simple, direct statement that the topic is welcome here is often all it takes to open the door.

“

“Many people who aren't currently in a relationship have concerns and even fears about whether someone in the future will be okay with their scars. Is this something you'd like to talk about?”

“

“I want to check in again — last time we talked you said you were feeling disconnected from your body. How are you feeling about this today?”

re-given, at a follow-up visit

Why We Are Uniquely Positioned

The burn surgeon may see a patient for a few minutes. A burn nurse is often busy with multiple patients. A burn therapist often spends extended time with them, daily, for months.



Repeated, Hands-On Contact

Scar management, ROM, functional activity — physical closeness that builds trust few other providers have access to.



Continuity Over Time

You see recovery unfold across weeks and months, not a single visit — giving permission room to be re-offered and revisited.



A Natural Bridge to the Body

Conversations about function, sensation, and scar already happen in rehab — intimacy is a short, natural extension.

Conversation Openers You Can Use Today

GENERAL PERMISSION

“A lot of the people I work with have questions about relationships, intimacy, or how their body feels different now. That’s something we can talk about here, whenever you’re ready.”

NORMALIZING (LIMITED INFORMATION)

“It’s really common for people to notice changes in how they feel about touch, closeness, or their body after an injury like this. You’re not alone in that.”

Two More — For Follow-Up and Referral

RE-OFFERING PERMISSION

“I want to check back in — is there anything about intimacy or relationships that’s been on your mind since we last talked?”

WARM REFERRAL

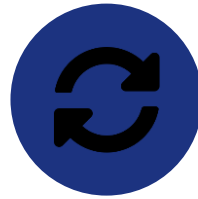
“What you’re describing sounds like it would really benefit from some dedicated time with our psychologist. I’d like to connect you, if you’re open to that.”

What We Covered Today



Intimacy, Defined

N2MEUC — connection, being seen,
being valued



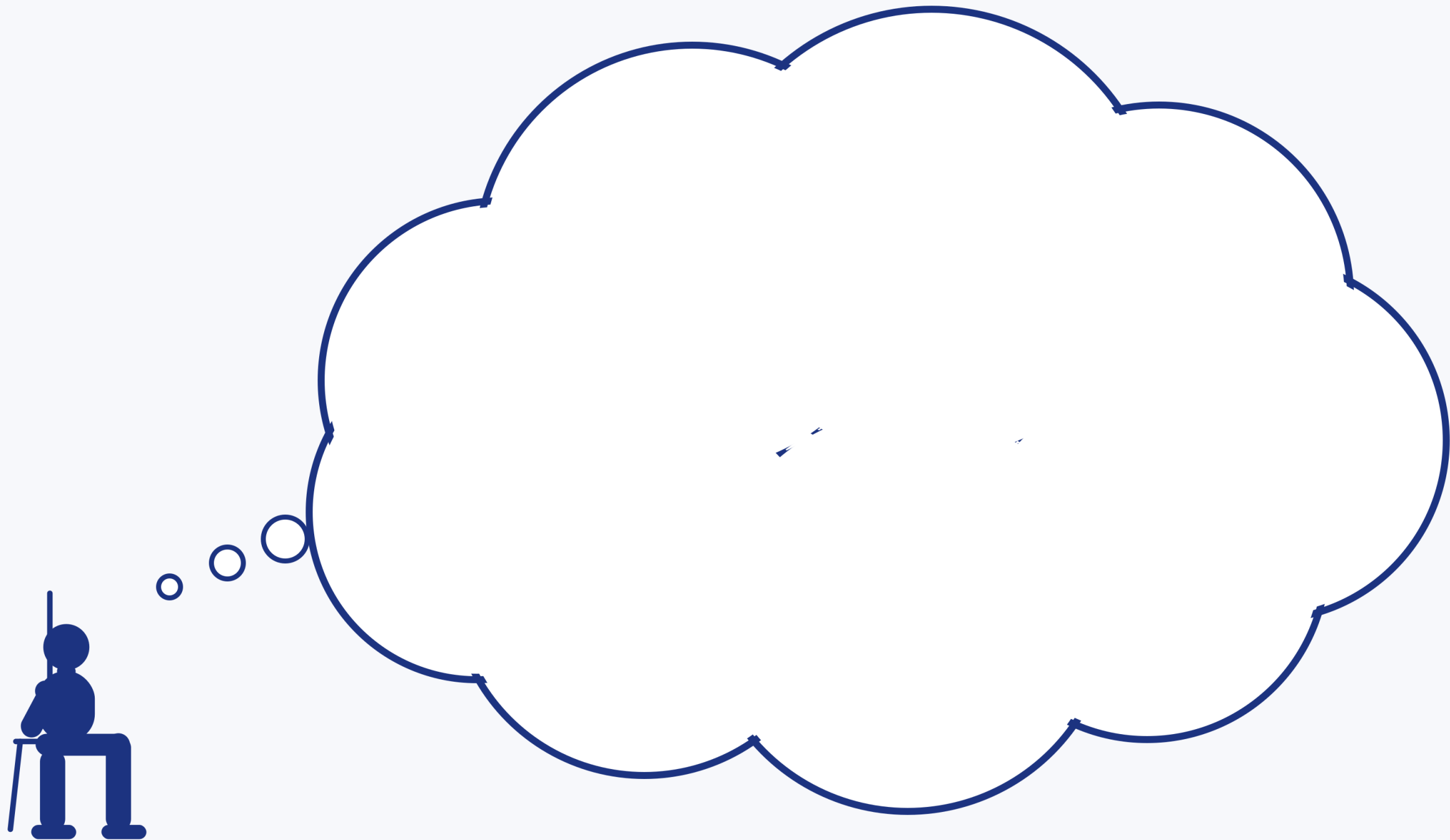
Ex-PLISSIT

A cyclical framework, starting with
permission



Openers

Finding the language that's natural to
you





Intimacy & Sexuality in Healthcare Education & Training

*Taught by Cindy Rutter, RN, BSN, LMFT
and Rebekah R. Allely, OTR/L*

READY TO BRIDGE THE GAP? THE MISSING CONVERSATION IN BURN CARE.

Gain the practical skills to confidently navigate patients' core intimacy concerns and fears, so you can break the silence and empower your patients in recovery.



For more information or to schedule, contact:

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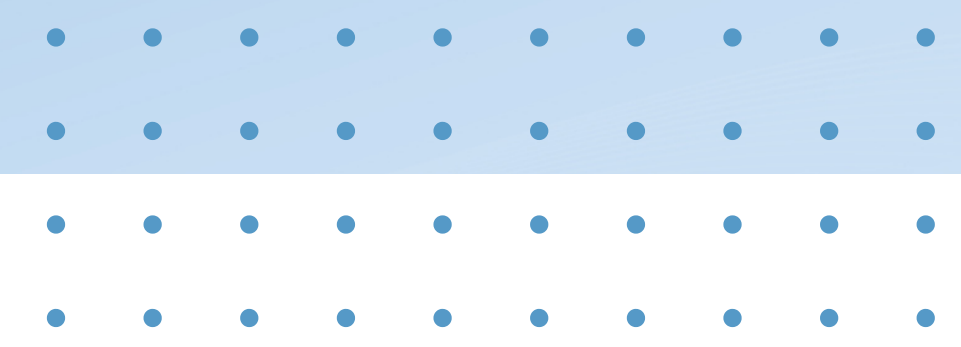
Thank You

Questions & Discussion

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FROM SKIN TO FUNCTION: APPLYING CUTANEOUS FUNCTIONAL UNITS IN BURN REHABILITATION

CJ Acosta Staples, OT/L, MOT



DISCLOSURES

No disclosures

OBJECTIVES

- Increase understanding of CFUs to enhance and guide what you do tomorrow morning with your burn patient
- Develop a clinical framework to prioritize rehabilitation interventions when treating patients with extensive burn injuries and limited treatment time

WHAT ARE CFUS?

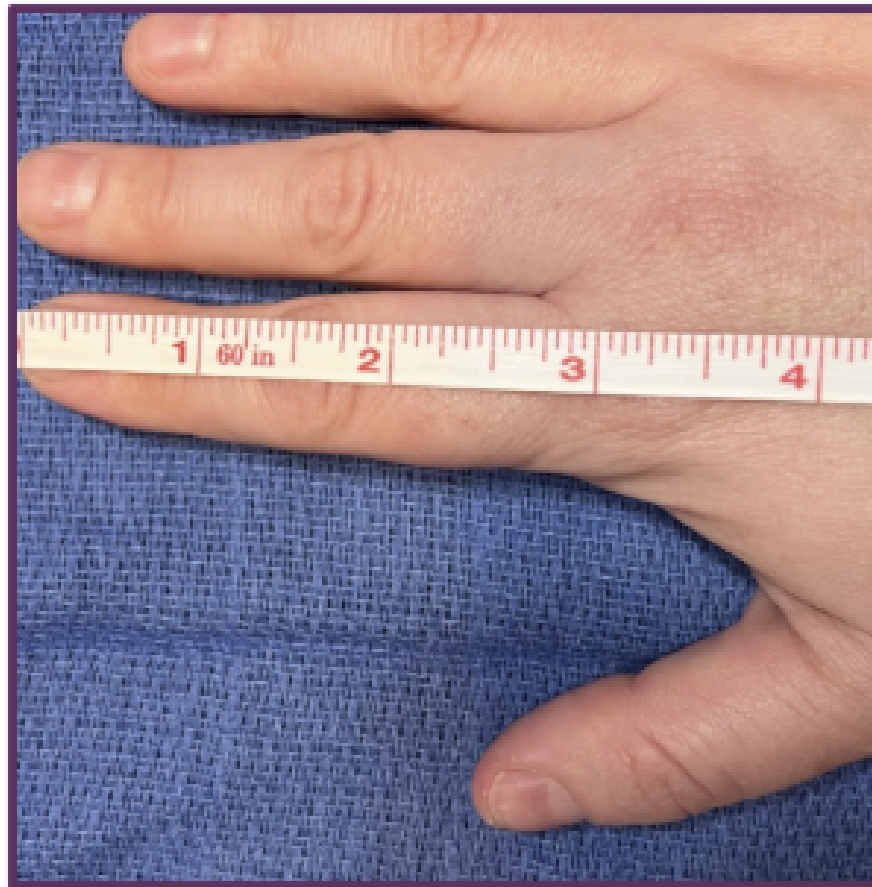
“CFUs in their simplest form are used to quantify to number of potential BSC sites that a patient may develop” (Parry et al, 2025 p. 1479)

CFUs are continuous regions of skin that are recruited during movement to provide mobility needed for functional activities

CFUs help us to predict motion loss, individualize rehabilitation planning and allocate therapy resources

The number count helps determine rehab time needed for maximizing functional outcomes (Parry et al, 2025 p. 1479) and (Richard et al., 2017, p. 230–242)

Courtesy of Renee Wartham, Valleywise Burn Center



Body limb segments change length as joint ROM occurs (Richard, et al., 1996)



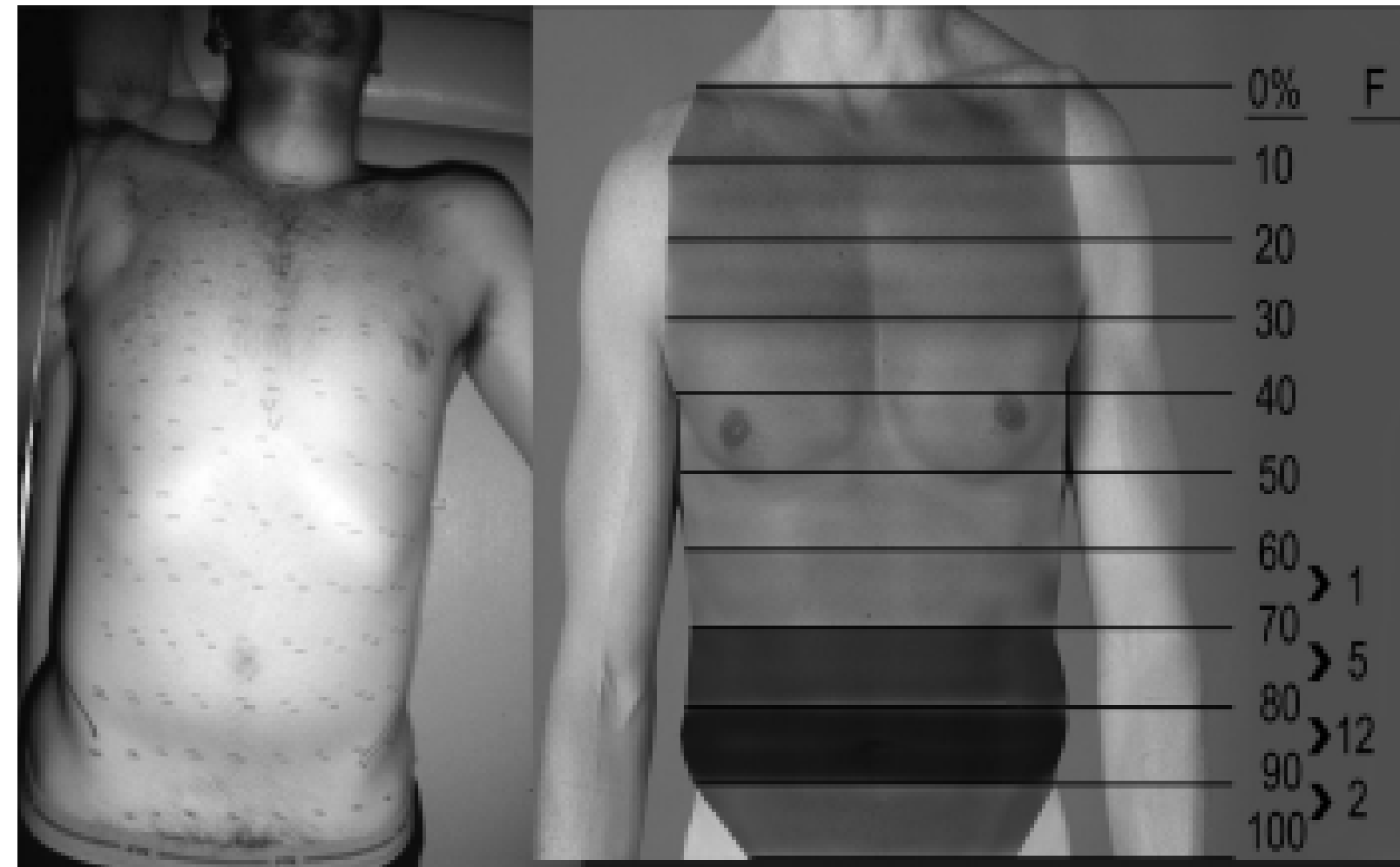
Courtesy of Renee Wartham, Valleywise Burn Center



Figure 7. Composite fist.

(Richard et al., 2009)

(Richard et al., 2009)



“Shoulder abduction has been found to result in the greatest amount of segment length increase with an average of 20.3 cm (8 inches) difference measured along a mid-axillary line from the iliac crest to the wrist. (Parry et al., 2019, p.378)

The History



Clinical problem - TBSA doesn't fully predict functional outcomes



Photographic Measurement of Volar Forearm Skin Movement with Wrist Extension: The Influence of Elbow Position (Richard et al., 1994)



Identification of Cutaneous Functional Units Related to Burn Scar Contracture Development (Richard et al., 2009)



CFU Hierarchy V1 (Richard et al., 2015)



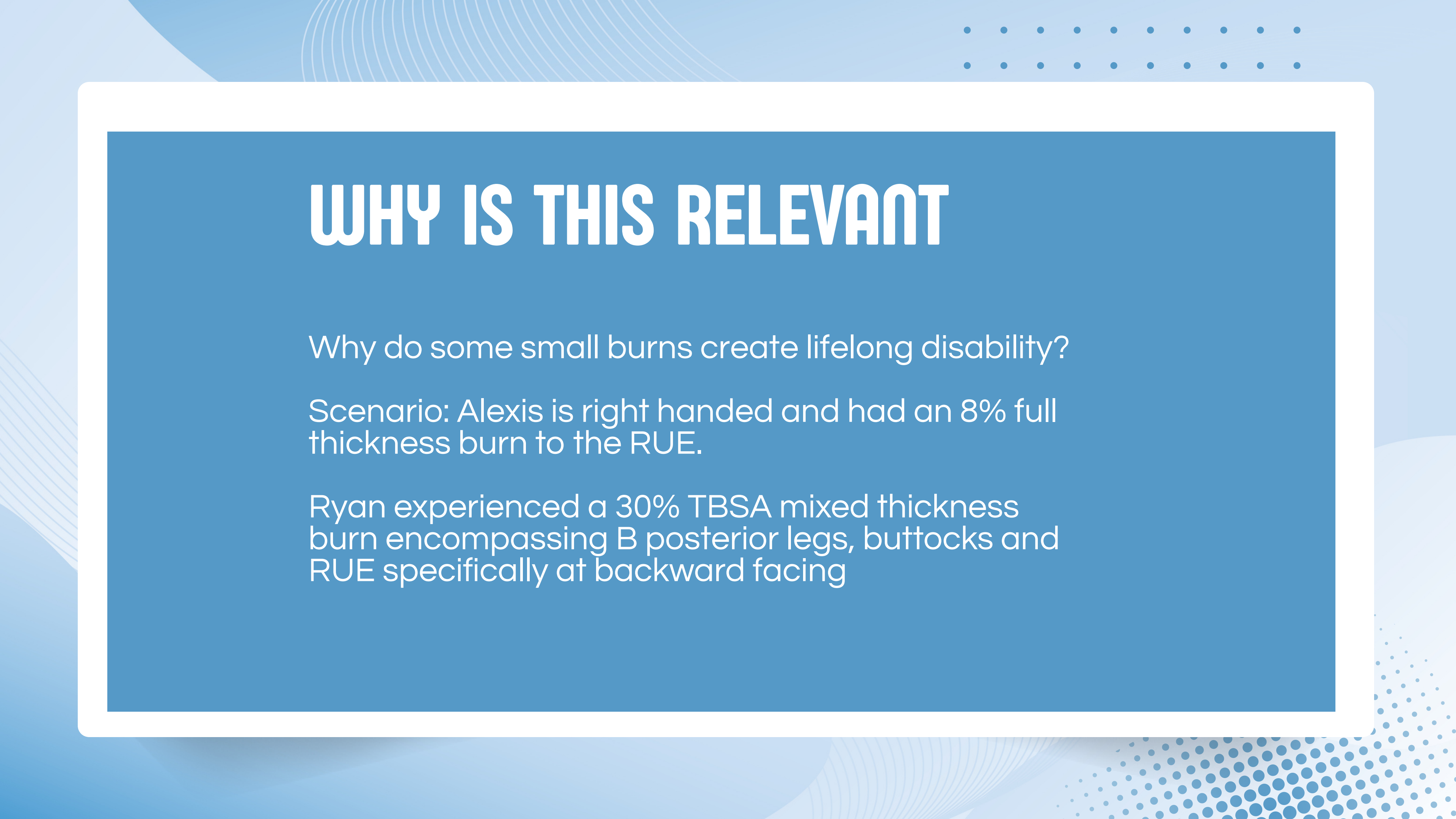
ACT Study (Richard and Santos-Lozada, 2017)



CFU Hierarchy V 2 (Parry et al. 2025)



Clinical Application



WHY IS THIS RELEVANT

Why do some small burns create lifelong disability?

Scenario: Alexis is right handed and had an 8% full thickness burn to the RUE.

Ryan experienced a 30% TBSA mixed thickness burn encompassing B posterior legs, buttocks and RUE specifically at backward facing

BURNCAM MEDICAL DIAGRAM

Compliments of Ingrid and her developer Orion,
meeting with developer to get images for
presentation



NATURAL SKIN IS KNOWN TO BE EXTENSIBLE UP TO 50% OF ITS ORIGINAL LENGTH.¹¹ BURN SCARS, BY COMPARISON, ARE RELATIVELY INELASTIC, BEING EXTENSIBLE ONLY UP TO 15% OF THE ORIGINAL LENGTH IN AN IMMATURE STATE¹¹ AND DECREASING TO 4% AT MATURITY.

(PARRY ET AL., 2019, P.378)



BEYOND TRADITIONAL ROM

Shifting our thinking from “where are they burned and where is the ROM most obviously affected”
to “where do we see a loss of function”

Traditionally we focus on joint → muscle → tendon....but the missing piece is SKIN

Movement can only occur within the limits of the tissues available to accommodate that movement

Scar tissue limits skin excursion before the joint ever becomes stiff



CUTANEOKINEMATICS

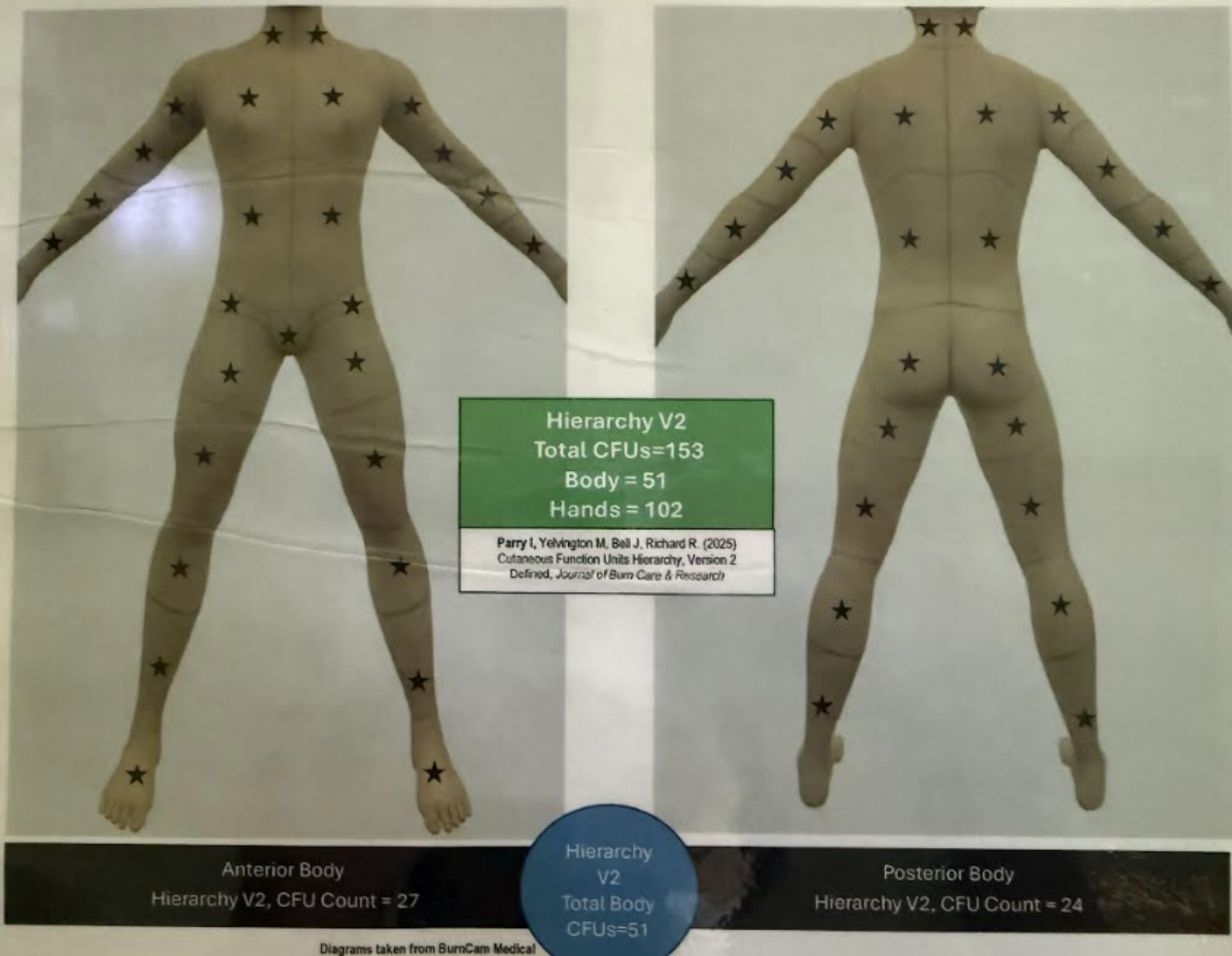
- The biomechanical assessment of dynamic skin movement and the ability of the skin to elongate and recruit tissue to accommodate joint range of motion (Parry et al., 2019)
- Thinking beyond just what anatomy is involved but what skin/CFUs are involved
- The effects of a burn scar extend beyond the anatomical area it covers. By altering skin mobility, a scar can influence movement and function across multiple anatomical regions

BURN LOCATION: STARTING POINT NOT THE ENDPOINT

- Hierarchy V2 Map helps us understand which functional movement systems are affected
- The visible location of a burn is our starting point of our assessment and the map/CFU framework helps us understand the long reaching effects of the burn
 - Help us predict proactively where we might see function loss

Table 1. Joint Motions Associated with Primary, Proximal and Distal CFU Codes and Written Description of CFU Body Areas

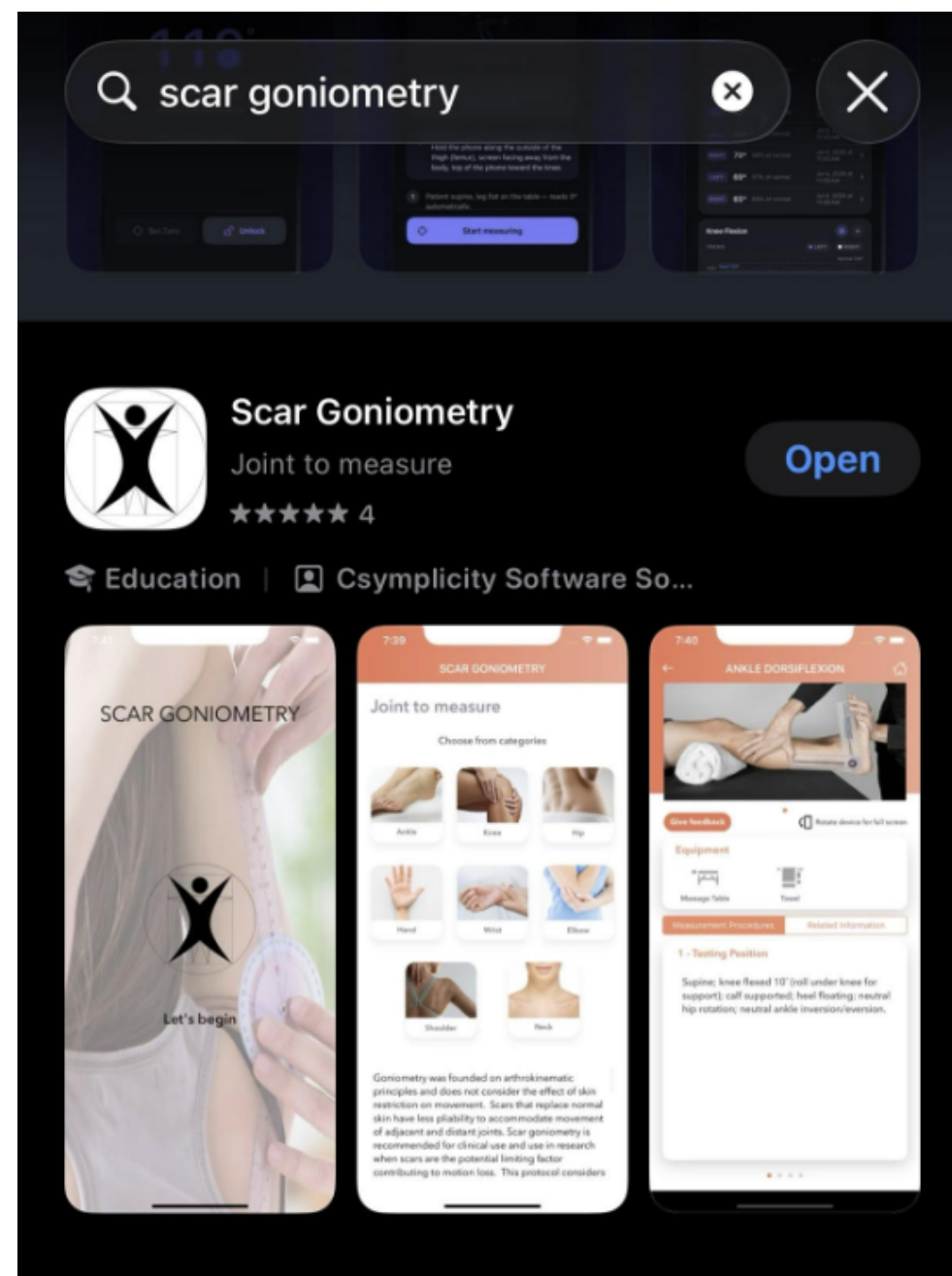
	Side	Joint	Motion	Movement code	Primary CFU code	CFU area description (skin segment over the area described)	Proximal CFU code	Proximal CFU area description	Distal CFU code	Distal CFU area description
Motions and CFUs originally defined in CFU Hierarchy v1										
1	NA	Neck	Flexion	21000	21000	Posterior Neck (trapezius area)				
2	NA	Neck	Extension	22000	32918	Anterior neck + anterior torso RUQ + LUQ	22000	Anterior neck	32900	Anterior torso RUQ + LUQ
3	R	Shoulder	Flexion	31002	31907	R Posterior torso RUQ + RLQ	31220	Posterior torso RUQ	31210	Posterior torso RLQ
4	L	Shoulder	Flexion	31001	31906	L Posterior torso LUQ + LLQ	31120	Posterior torso LUQ	31110	Posterior torso LLQ
5	R	Shoulder	Abduction	32002	32906	R Anterior torso RUQ + RLQ	32220	Anterior torso RUQ	32210	Anterior torso RLQ
6	L	Shoulder	Abduction	32001	32908	L Anterior torso LUQ + LLQ	32120	Anterior torso LUQ	32110	Anterior torso LLQ
7	R	Shoulder	External Rotation	32203	32920	R Anterior torso RUQ + R anterior proximal arm	32220	Anterior torso RUQ	42220	R Anterior arm proximal
8	L	Shoulder	External Rotation	32103	32921	L Anterior torso LUQ + L anterior proximal arm	32120	Anterior torso LUQ	52220	L Anterior arm proximal
9	R	Elbow	Flexion	41200	41200	R Posterior arm	41210	R Posterior arm distal	41220	R Posterior arm



Courtesy of Ingrid Parry



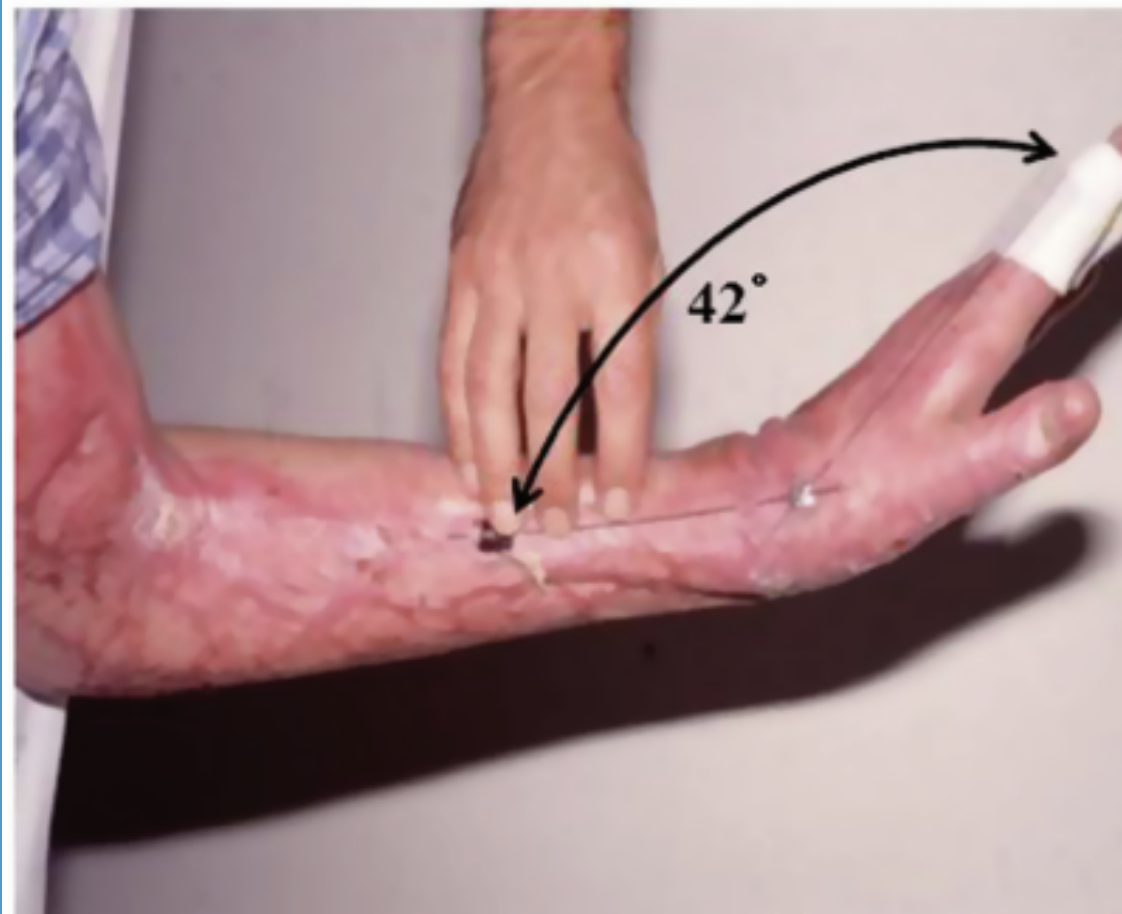
PRACTICAL APPLICATION



"In a multicenter study assessing 174 joints from 66 subjects at seven burn centers totaling 1044 measurements for comparison and it was found that utilizing burn scar goniometry protocol identified approximately 7% greater movement limitation compared to utilizing standard goniometry"

(Parry et al., 2019)

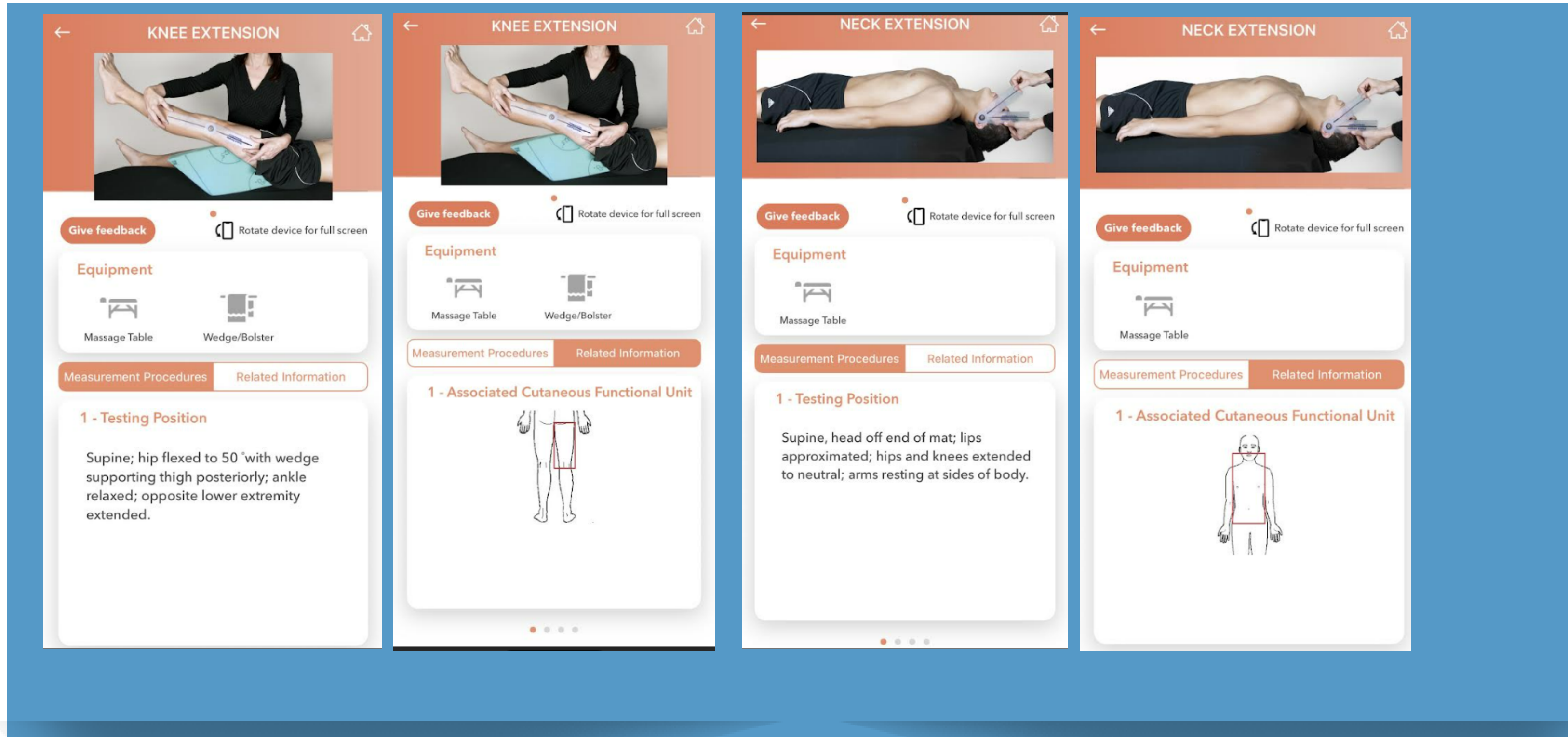
A – Elbow flexed



B – Elbow extended



Parry et al., 2019



Screenshot from *Scar Goniometry* (Cysmplicity Software Solutions Inc., 2019/2024)

DOCUMENTATION

Physical

- **Visual Observation:** Patient undergoing wound care, able to visualize wounds, appear to be deep partial to full thickness with thick dry eschar, escharotomies to BUE and trunk, hands resting in intrinsic minus position.
 - Burn incorporates the cutaneous functional units for Bilateral shoulder flexion, shoulder abduction, elbow flexion, elbow extension, wrist flexion, wrist extension, digit flexion, digit extension, left knee flexion, left ankle plantar flexion, bilateral hip flexion and extension, neck extension
 - Burn involvement likely to impact bilateral shoulder horizontal adduction, internal rotation, external rotation, thumb flexion, thumb abduction, trunk rotation, trunk lateral flexion, trunk forward flexion, neck rotation, neck lateral flexion
- **Edema:** ***
- **Sensation:** *** {functioning:21260}
- **Range of Motion:** AROM: {rom:319602} PROM: {rom:319602}***

Courtesy of Renee Wartham, Valleywise Burn Center

DOCUMENTATION

Integumentary System Impacted: Pt's ____ presents with ____ burns. Pt is at ____ risk for developing burn scar contractures beyond the location of burns extending to joints uninvolved in burn. In reference to Cutaneous Functional Units (CFUs), pt is at risk for developing contractures in the following planes of movement: shoulder flexion, abduction, and internal and external rotation, elbow flexion and extension, pronation, supination, and wrist flexion and extension. Burn scar contractures will decrease pt's PROM and thus impact pt's independence to complete daily activities where reaching, and grasping and releasing are important functional mobility tasks.



IMPROVING MULTIDISCIPLINARY COLLABORATION

- Increased support from surgeons for specific splinting/positioning choices
 - A shared language and framework
 - Help establish common rehabilitation priorities
 - Everyone is treating the same threatened CFUs just through different interventions and different functional end goals
- 



PRACTICAL FRAMEWORK

- What skin/CFU is involved? (beyond the joint and muscle)
- What movement requires that skin
- What daily functional activity requires that movement
- What intervention preserves that pathway

Cutaneous functional units provide a framework for seeing beyond the wound and focusing on the function the patient is trying to regain



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CITATIONS

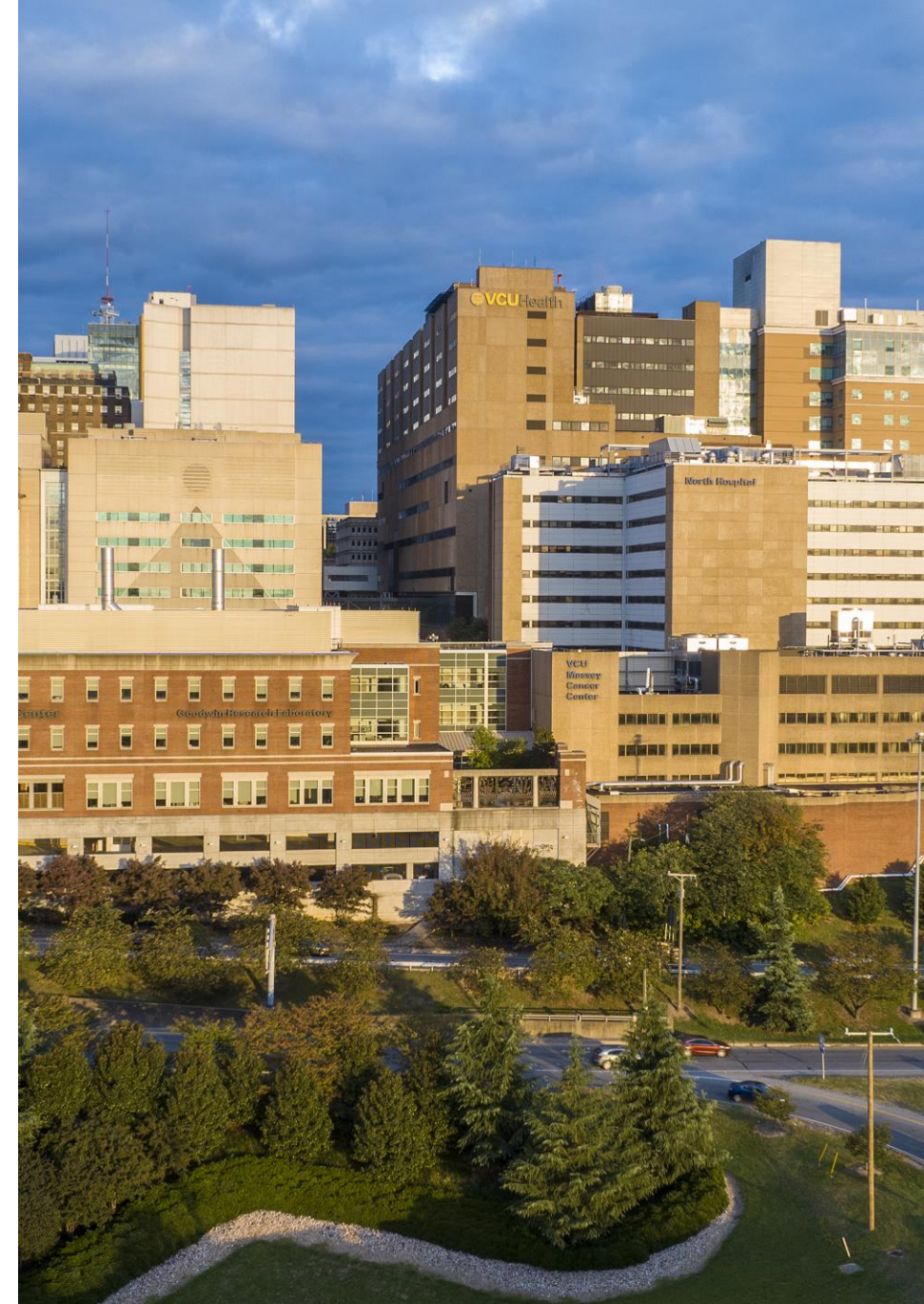
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Community Re-integration and Improving the Continuum of Care

Presenters: Natalie Hart, DPT & Maggie Hunter, OTD

Collaborators: Alex Darby, DPT, Catherine Massengill, DPT, &
Logan Russell, DPT



Disclosures

The authors have no relevant financial disclosures

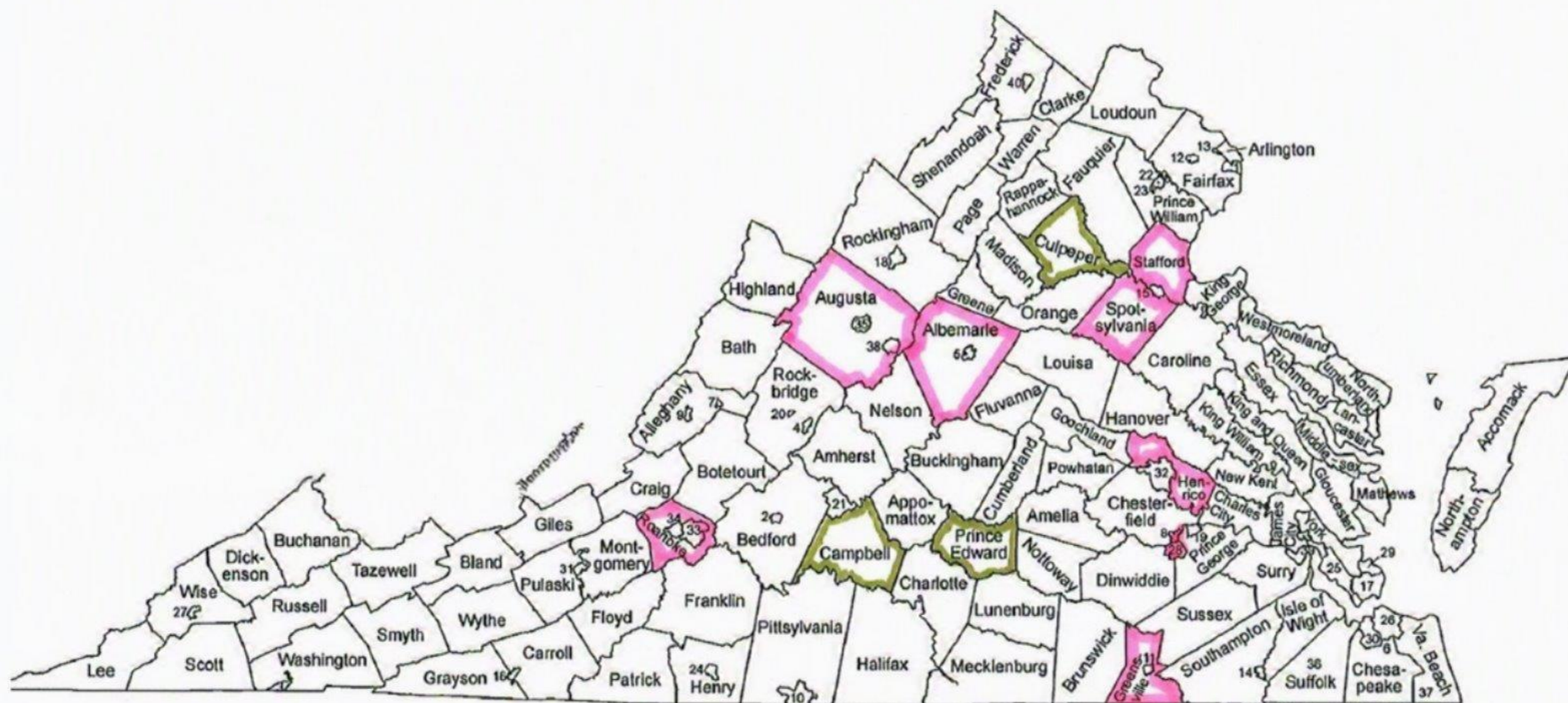
Objectives

- Provide an overview of Evans-Haynes Burn Center current therapy structure
- Describe process for designing quality improvement projects
- Outline protocol for community re-integration project
- Discuss initial results and opportunities for improvement of community re-integration program
- Explain role and purpose of VCU Burn Special Interest Group
- Discuss process for improving knowledge and access to therapy across the continuum of care within VCU Health System
- Collaborate on how other burn centers address community re-integration and rehabilitation services across continuum of care

Overview of VCU Burn Center

- Founded by Dr. Everett I. Evans in 1947 and is the oldest civilian burn facility in the United States
- VCU Health is the only Level 1 burn facility in Virginia verified by the American Burn Association (ABA)
- 16 beds – 8 ICU, 8 stepdown
- Acute Care Burn Rehabilitation team
- Outpatient Burn OT
- Network of PT/OT/SLP/hand therapy across outpatient clinics for adults & pediatrics





Background

- More than 30% of burn survivors report experiencing long-term psychosocial challenges after their injury (Rosenberg et al., 2018; Shokre et al., 2024), including managing social relationships and participating in meaningful activities (Capell et al., 2025)
- It has also been reported that 24% of outpatient and 56% of inpatient burn patients report that their psychosocial needs were not met, illustrating the need for psychosocial services to be provided throughout an individual's recovery process (Kleve et al., 1999)
- Social skills training has been found to be an effective intervention to improve community interactions (Van Loey et al., 2003)

Needs Assessment and Project Goals

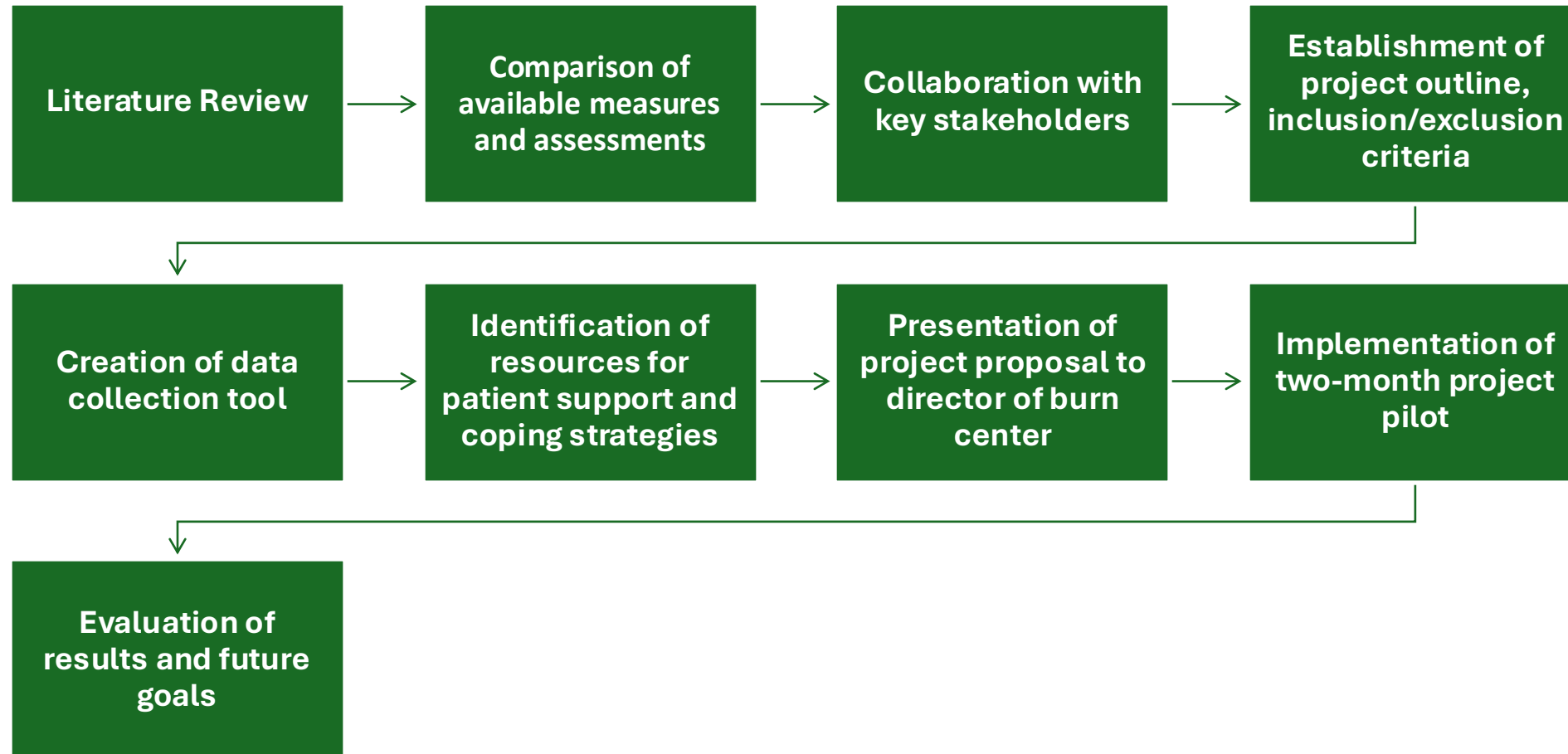
Limited preparedness for return to community and increased social anxiety

- Initiation of interventions to address psychosocial needs

Limited access to burn-specific therapy follow-up care after discharge from acute setting

- Increase outpatient therapist knowledge
- Improve referral process

Community Re-integration Program Development Process



CARe Burn Scale



- Patient reported outcome measure
 - Developed with input from burn survivors
- Assesses quality of life and therapeutic progress throughout recovery from burn injury
- Adult, Young person, Child, and Caregiver scales
- Correlates moderately to highly with other quality of life scales measuring similar constructs
- Recommended to utilize entire scale, but subscales can be used individually
- Applicable to acute setting

CARe Burn Scale



- 53 items across 14 subscales
- Subscales address:
 - How burn wounds and scars look and feel
 - Social situations
 - Friendships
 - Work
 - Family
 - Self-image
 - Self-acceptance
 - Intimacy
 - Mood
 - Positive impacts of burn injuries

4. How do you find social situations?

Please answer thinking of the PAST WEEK

	Never	Sometimes	Often	Always
4.1 It's ok when family members ask me about my burn wounds/scars	1	2	3	4
4.2 It's ok when new people look at my burn wounds/scars	1	2	3	4
4.3 I feel ok showing my burn wounds/scars in public (e.g. when swimming)	1	2	3	4
4.4 I feel ok with family members touching my burn scars	1	2	3	4

Patient Identification

Inclusion criteria:

- Patients requiring surgical reconstruction AND
 - Hand/upper extremity burns OR
 - Facial burns OR
 - $\geq 10\%$ TBSA

Exclusion criteria:

- Active wound infection
- Isolation precautions
- Behavioral concerns deemed inappropriate for community outing (i.e. violence, aggression, non-redirectable inappropriate behavior)

CARe Burn Scale Administration

- Administer scale prior to community re-integration intervention to characterize specific aspects of psychosocial well-being and monitor post-participation changes
- Develop patient-specific community re-integration plan
- Repeat administration of CARe Burn Scale before discharge



Community Reintegration Plan



Choose off-unit outings that are salient to patient goals



Grade level of exposure as appropriate



Develop a "social story" or script to respond to questions



Identify coping strategies for negative emotions or potential reactions from people encountered during outing



Collaborate with trauma psychologist for reflection if appropriate

Community Re-integration Outings

- Locations:
 - Hospital gift shop, cafeteria, Starbucks, Panara Bread, Chick-fil-A, hospital gardens, Child Life Zone at Children's Hospital
- Pathways and ending locations can be graded to increase or decrease the level of social participation and exposure
- Collaborate with trauma psychologists and child life specialists to be present for outings or follow-up with patients after outings as appropriate



Changing Faces



Providing support
and promoting respect
for everyone with
a visible difference

- UK-based organization to provide education, support, advocacy, and community for those living with visible differences
- Online community support, open question forum, online workshops for patients/caregivers
- Practical patient advice, education and guidance, including strategies for:
 - Managing comments and questions about your appearance
 - Building self confidence
 - How to react when people stare at you
 - Tools to help cope with other people's reactions

Examples of Coping Strategies

- Explain, Reassure, Divert
 - **EXPLAIN** to the other person & themselves
 - **REASSURE** the other person & themselves
 - **DIVERT**– provide short explanation of their condition and change subject
- 3-2-1 Tool
 - Three things to **DO** if someone stares at you
 - Two things to **SAY** if someone asks what happened
 - One thing to **THINK** if someone turns away



Providing support
and promoting respect
for everyone with
a visible difference

Initial Results

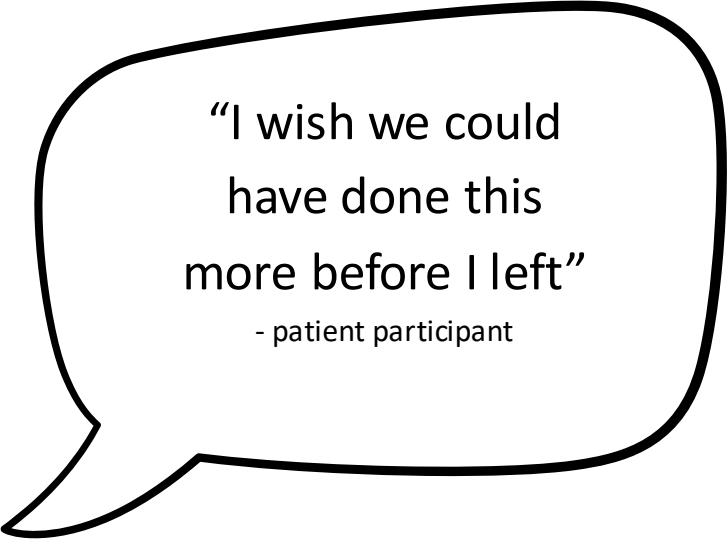
2-month project pilot

7 patient outing experiences

Limited participants completed the post scale

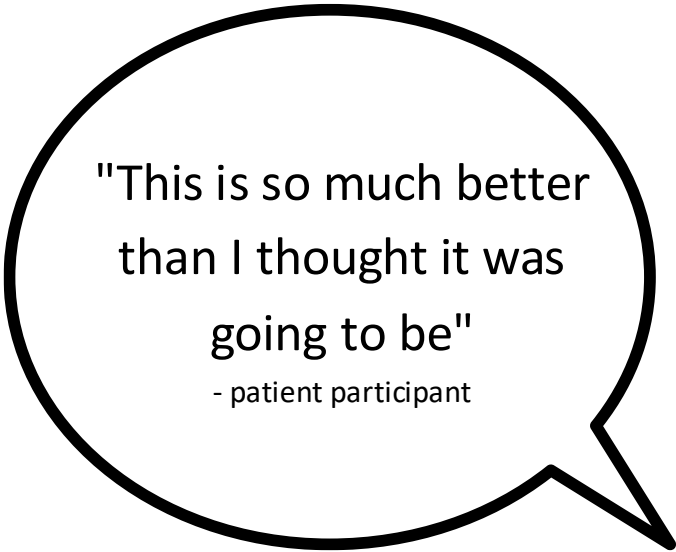
- Most significant improvement noted in subscale regarding burn injury changing you as a person in positive ways
- Improvement in mood
- Improvement in feelings about intimacy
- Improvement in subjective opinions about ability to form friendships and feeling part of a group
- Slight decrease in feelings about social situations – feeling less confident about people looking at burn wounds/scars

Positive Changes in Affect



"I wish we could
have done this
more before I left"

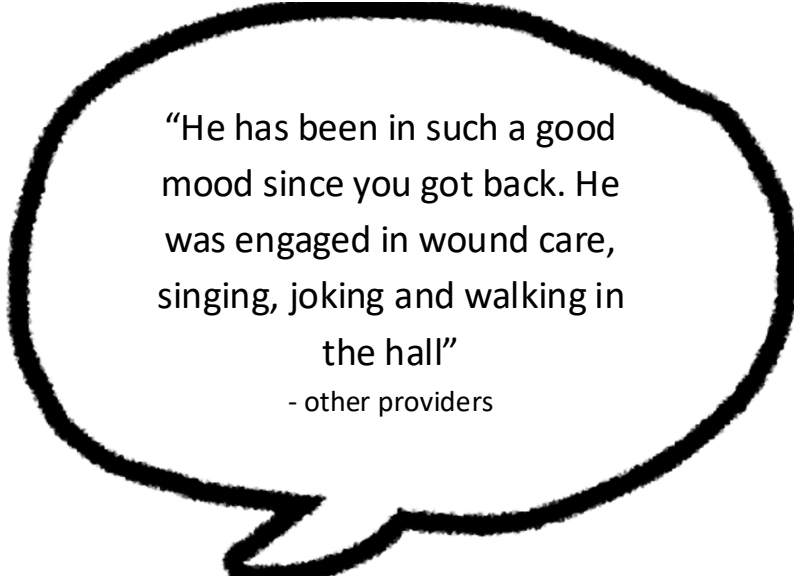
- patient participant



"This is so much better
than I thought it was
going to be"

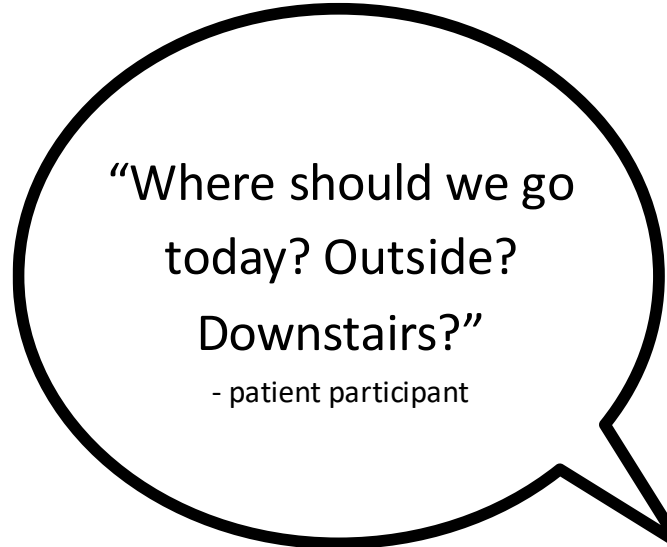
- patient participant

Improved Motivation and Engagement

A hand-drawn style speech bubble with a thick black outline. It has a main oval body and a small tail pointing towards the bottom-left.

“He has been in such a good mood since you got back. He was engaged in wound care, singing, joking and walking in the hall”

- other providers

A hand-drawn style speech bubble with a thick black outline. It has a main oval body and a small tail pointing towards the bottom-right.

“Where should we go today? Outside? Downstairs?”

- patient participant

Initiation of discussions about self-esteem and managing expectations



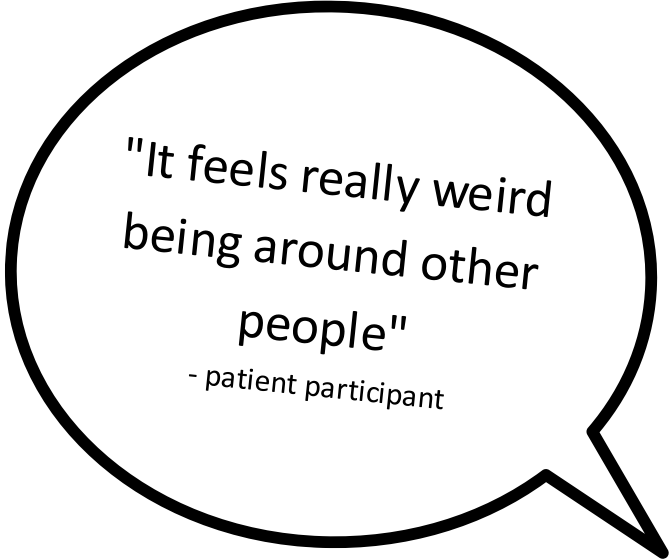
"My social anxiety
is really high"

- patient participant



"I feel like
everyone is looking
at me"

- patient participant



"It feels really weird
being around other
people"

- patient participant

Future-Focused Thinking and Planning



"I think when I am healed,
I really want to focus on
my landscaping business"

- patient participant



"This helped me
feel more ready to
leave the hospital"

- patient participant



"This has helped me
realize what is really
important in life"

- patient participant

Limitations

- Small sample size
- Limited number of outings due to length of stay
- Difficult to obtain post-outing assessment given time required to complete scale and patient length of stay
- Lack of measurable change in CARe scale score
- Limited time to process feelings and emotions after community outings

Future Goals

- Increase sample size
- Begin community re-integration process earlier during hospitalization
- Increase number of community re-integration outings during admission
- Collect and analyze objective data
- Establish tool to collect subjective data and patient experience information
- Further collaboration with trauma psych to address patient specific goals
- Improve outpatient referral process
- Create resources for continuation of community re-integration support after discharge
- Evaluate long-term impact of intervention
- Re-evaluation of CARE scale in outpatient setting

Future Goals

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- Re-evaluation of CAre scale in outpatient setting

Improving the Burn Continuum of Care

- Increasing outpatient therapist knowledge and skills regarding treatment of burn survivors and common complications
- Improving referral process within VCU Health
- Establishment of Burn SIG
- Mission:
 - "To create educational opportunity to advance knowledge and skills of therapy practitioners across the continuum of care to improve recovery and outcomes for burn survivors"
- Providing tools for patients to continue graded community exposure, return to work

Burn Special Interest Group

- Completed needs assessment
 - 36% of outpatient therapists lack confidence in treating burn patients
- Developed clinic resource list for patients and providers
 - Includes specialty interventions available at each location
- Collaborated with outpatient providers to do hands-on training with burn therapists
- Collaborated with outpatient burn clinic providers on referral process
- Created and presented in-service about burn rehabilitation
 - Provided to inpatient & outpatient clinicians in adults and pediatrics
 - Included strategies to support community re-integration
 - 80% of attendees reported they are "very likely" to apply the information to their practice
- Future goals for this group
 - Facilitate advanced knowledge applicable to burn care
 - Foster knowledge experts to serve as resources across disciplines and settings

Discussion

- How do other burn centers provide burn-specific follow-up care to address long term complications and impairments? How do you ensure therapists are competent to treat burn patients?

Discussion

- Do other burn programs have established community re-integration programs in the acute setting?

Discussion

- For outpatient therapists, do you address community re-integration for this population? What does that look like?

Summary

- Burn survivors have unique psychosocial needs and are at high risk of developing post-injury depression, anxiety, and PTSD
- Identifying and supporting psychosocial needs of burn survivors in the inpatient setting can help facilitate the transition back into their communities and support long-term psychological coping following burn injury
- Therapy interventions addressing community re-integration can improve patients' affect, mood, and engagement, initiate conversations about life beyond the hospital, and help with early referrals to outpatient psychosocial support
- Continued burn-specific physical and occupational therapy is needed beyond the acute setting
- Collaboration between acute and outpatient therapists to share knowledge and address gaps in care is a good first step to improve the burn therapy continuum of care

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Addressing Delirium in the Burn Unit

Rachel Szalony, OTR, CLT

Parkland Health

September 10, 2026

Presented at Southern Region Burn Conference



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Care. Compassion. Community.



- **Define and identify ICU delirium in general and burn populations**
- **Assess long-term outcomes of ICU delirium in burn populations**
- **Demonstrate understanding of multidisciplinary roles in addressing delirium**
- **Integrate delirium prevention and management strategies in burn therapy practice**



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Defining & Identifying Delirium



Delirium is...

- **Acute**
- **Fluctuating, changing**
- **Affects *attention*, awareness, & cognition**

Delirium is not just...

- **Disorientation (being A&O less than x4)**
- **Confusion**
- **Agitation**

- **Delirium subtypes**

Hyperactive

- Agitated
- Restless
- Hallucinating
- Aggressive

Hypoactive

- Most common type
- Withdrawn
- Drowsy/lethargic
- Flat affect

Mixed

- Alternating features of both hypo- and hyper- active



1. Identify level of consciousness

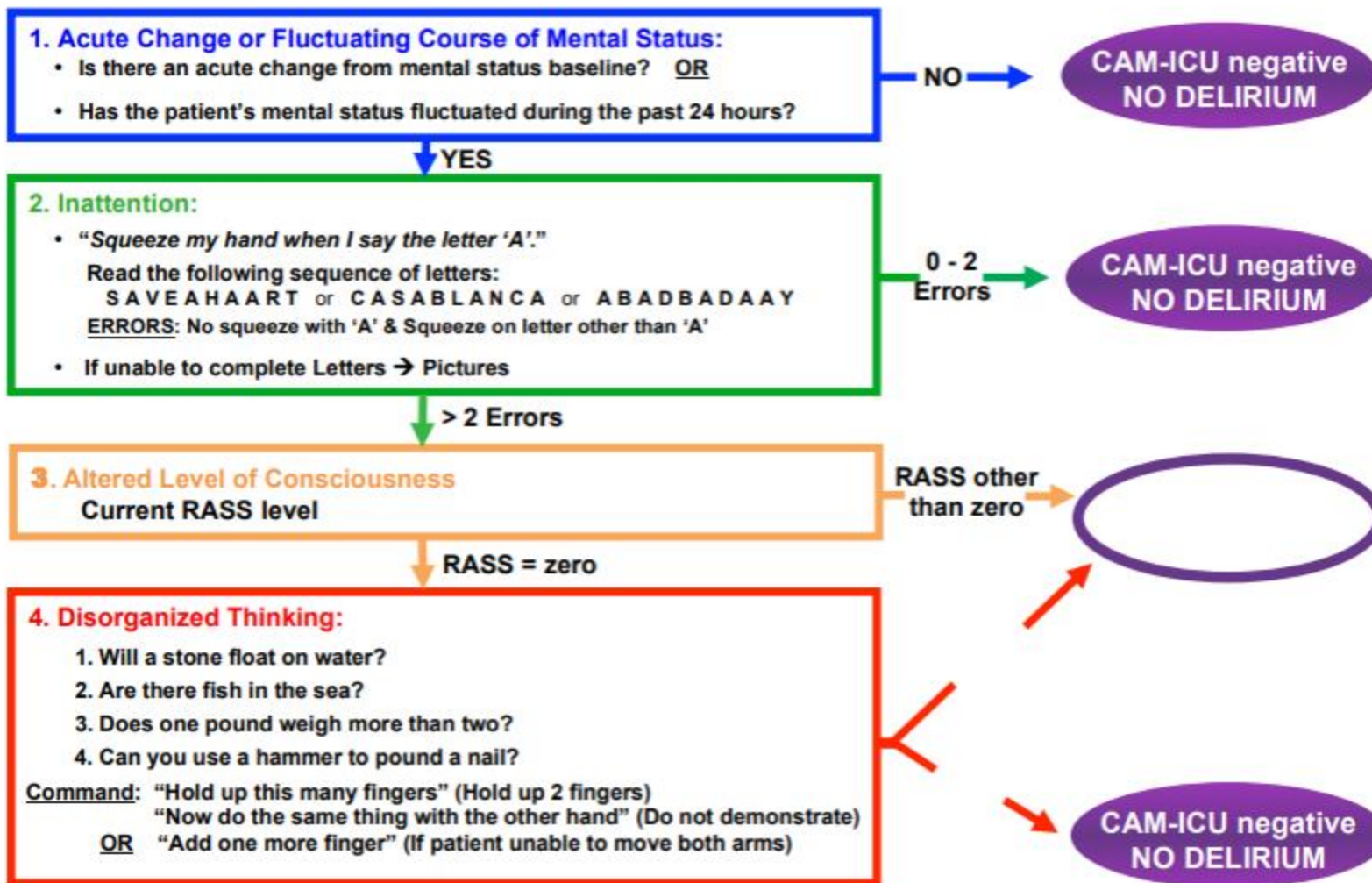
- **Richmond Agitation-Sedation Scale (RASS)**
 1. Does not identify delirium
 2. Used as a precursory scale to identify effects of sedative medications and potential fluctuations in alertness

2. Identify content of consciousness

- **Confusion Assessment Method for ICU (CAM-ICU)**
- **Pediatric CAM-ICU (pCAM-ICU)**
- **Pre-School CAM-ICU (psCAM-ICU)**



RASS score				
Richmond Agitation & Sedation Scale				CAM-ICU
Score	Description			
+4	Combative	Violent, immediate danger to staff		RASS ≥ -2 Proceed to CAM-ICU assessment
+3	Very agitated	Pulls at or removes tubes, aggressive		
+2	Agitated	Frequent non-purposeful movements, fights ventilator		
+1	Restless	Anxious, apprehensive but movements not aggressive or vigorous		
0	Alert & calm			
-1	Drowsy	Not fully alert, sustained awakening to voice (eye opening & contact >10 secs)		Voice
-2	Light sedation	Briefly awakens to voice (eye opening & contact < 10 secs)		
-3	Moderate sedation	Movement or eye-opening to voice (no eye contact)		Touch
-4	Deep sedation	No response to voice, but movement or eye opening to physical stimulation		
-5	Un-rousable	No response to voice or physical stimulation		
				RASS < -2 STOP Recheck later





Ages 5+ years

Pediatric CAM-ICU (pCAM-ICU): DELIRIUM = Presence of FEATURES 1 + 2 + either 3 or 4

FEATURE 1: Acute Change or Fluctuating Course of Mental Status

1. Is there an acute change from mental status baseline? (Y or N)
 2. Has the patient's mental status fluctuated during the past 24 hours? (Y or N)
- If ***YES*** to **EITHER** question then Feature 1 is **PRESENT** → move on to **FEATURE 2**

FEATURE 2: Inattention

- Say: "Squeeze my hand when I say 'A'. Let's practice: A, B. Squeeze only on A."
- Read this letter sequence: **A B A D B A D A A Y**
- Did the patient make 3 or MORE ERRORS? (Error = No squeeze with 'A' or Squeeze with other letters)
- If ***YES*** then Feature 2 is **PRESENT** → move on to **FEATURE 3**

FEATURE 3: Altered Level of Consciousness (LOC)

- Does the patient currently have an altered LOC? (i.e. not alert and calm)
- If ***YES*** then **STOP** → **DELIRIUM PRESENT**
- If ***NO*** then Feature 3 is **NOT** present → move on to **FEATURE 4**

FEATURE 4: Disorganized Thinking

- Say: "I am going to ask you some questions." (Tell patient to answer yes/no by voice, head nod, etc.)
- Questions: 1. Is sugar sweet? Alternate questions: - Is a rock hard?
(1 point each) 2. Is ice cream hot? - Do rabbits fly?
3. Do birds fly? - Is ice cream cold?
4. Is an ant bigger than an elephant? - Is a giraffe smaller than a mouse?
- Command: 5. Two-step command: Say, "Hold up this many fingers." Demonstrate by holding up 2 fingers.
(1 point) Then say, "Now do that with the other hand." Do NOT demonstrate this part of the command.
- Did the patient make 2 or MORE ERRORS? (Error = Answer question incorrectly, doesn't follow command, etc.)
- If ***YES*** then → **DELIRIUM PRESENT**

NO

YES

NO

YES

YES

NO

YES

NO

**STOP
DELIRIUM
ABSENT**

**DELIRIUM
PRESENT**

**DELIRIUM
ABSENT**



Ages less than 5 years

PreSchool CAM-ICU (psCAM-ICU): **DELIRIUM** = Presence of FEATURES 1 + 2 + either 3 or 4

FEATURE 1: Acute Change or Fluctuating Course of Mental Status

1. Is there an **acute change** from mental status baseline? (Y or N)
 2. Has the patient's mental status **fluctuated** during the past 24 hours? (Y or N)
- If "YES" to **EITHER** question then Feature 1 is **PRESENT** → move on to **FEATURE 2**

FEATURE 2: Inattention

Show each picture to the patient, slowly move it in front of their face to one side while verbally prompting them to look at the picture, then switch to the next picture and repeat to other side. (10 pictures)

1. Did the patient make **3 or MORE ERRORS**? (Error = does not look at cards, even when eyes open)
2. Did the patient have **difficulty keeping their eyes open** during **MOST** of your picture assessment? (A patient should maintain eye opening for at least half of the assessment period. Even if they attend to 8 or more pictures, they are considered inattentive if they continually require your voice to stimulate eye opening.)

→ If "YES" to **EITHER** question then Feature 2 is **PRESENT** → move on to **FEATURE 3**

FEATURE 3: Altered Level of Consciousness (LOC)

1. Does the patient currently have an **altered LOC**? (i.e. not alert and calm)

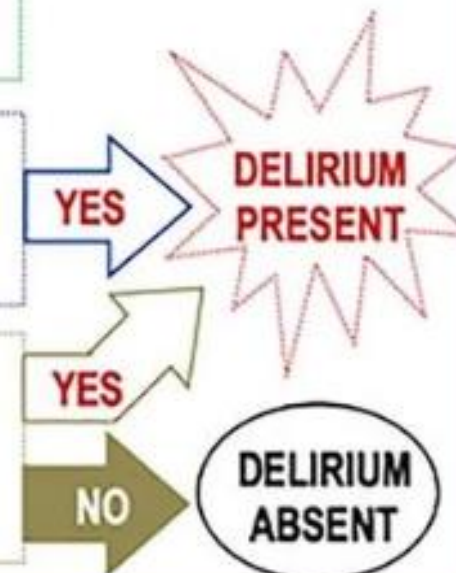
→ If "YES" then **STOP** → **DELIRIUM PRESENT**

→ If "NO" then Feature 3 is **NOT** present → move on to **FEATURE 4**

FEATURE 4: Disorganized Brain

1. Does the patient have a **sleep-wake cycle disturbance**? (Presence of any **ONE** of the following)
Patient sleeps mostly during the day. Patient has difficulty getting to sleep.
Patient does not awaken easily to stimulation. Patient sleeps only a little at night.

→ If "YES" then → **DELIRIUM PRESENT**

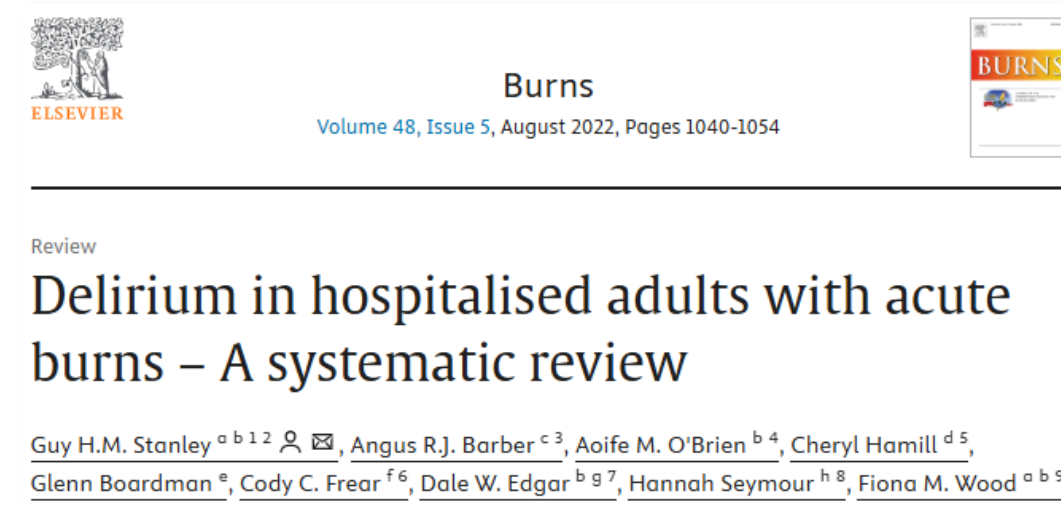




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Burn ICU Delirium in the Literature

- Incidence of delirium in burn populations are reported from 10-77%. (Bergus et. al, 2026)
 - Burn patients have higher clusters of both biological and environmental risk factors for delirium including:
 - Systemic inflammatory response
 - Impaired cerebral energy metabolism
 - Painful procedures
 - Sedation/analgesia requirements
 - Critical illness and ICU admission
- Survivors of large burns are 66% more likely to develop Post-Intensive Care Syndrome (PICS). (Carel et. al, 2023)
- Delirium in general ICU populations is an independent predictor of higher 6-month mortality. (Ely et. al, 2004)





- In general ICU populations:
 - Sedation breaks with OT/PT early mobility/activity significantly reduced the duration of delirium. (Schweikert et. al, 2009)
- In burn populations:
 - No studies done specifically in burn populations
 - 2023 Early Mobility in Burns Clinical Practice Guideline- Recommends early mobility conditionally in burn populations acknowledging translation of general population research to burn population

ABA GUIDELINES

Clinical Practice Guideline: Early Mobilization and Rehabilitation of Critically Ill Burn Patients

Robert Cartotto, MD, FRCS(C),^{*} Laura Johnson, MD, FACS, FCCM,[†] Jody M. Rood, RN, BSN,[‡] David Lorello, BT-C, DPT,^{||} Annette Matherly, MS, RN, CCRN,[§] Ingrid Parry, MS, PT, BT-C,[¶] Kathleen Romanowski, MD, FACS,^{**} Shelley Wiechman, PhD, ABPP,^{††} Amanda Bettencourt, RN, PhD, CCRN-K, ACCNS-P, APRN,^{‡‡} Joshua S. Carson, MD, FACS,^{|||} Henry T. Lam, MLS,^{§§} and Bernadette Nedelec, PhD, BSc, BT-C,^{¶¶} for the Clinical Practice Guideline ad hoc Committee of the American Burn Association



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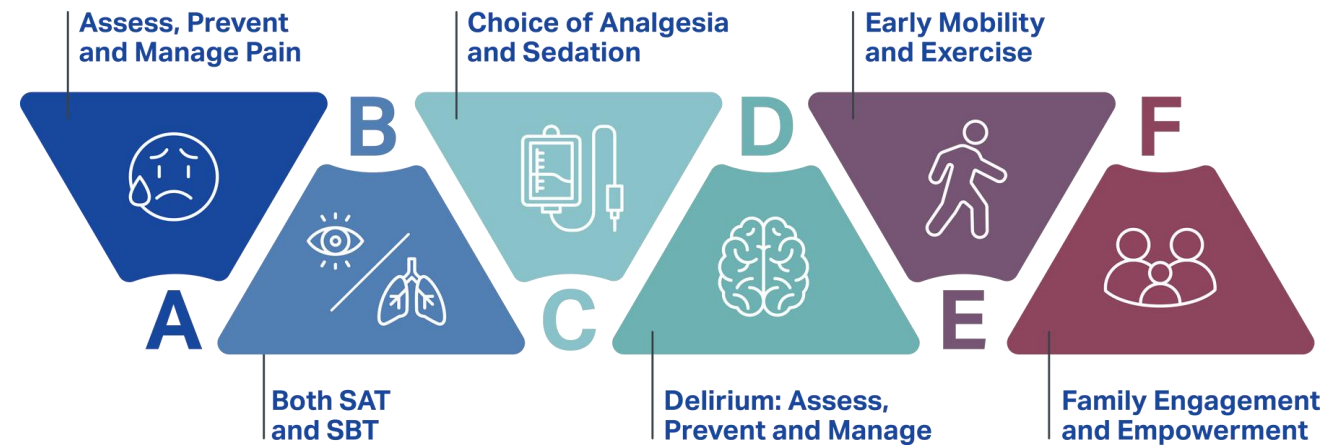
Multi-Disciplinary Roles in Addressing Delirium



- **MDs/Pharmacists**
 - Choosing right medications for pain management
 - PADIS (Pain, Agitation, Delirium, Immobility, and Sleep Disruption) Guidelines are considered best practice
 - These guidelines recommend using non-benzodiazepine sedatives (either propofol or dexmedetomidine) rather than benzodiazepines (either midazolam or lorazepam) or anti-psychotics
 - Increased complication with pain management and need for anesthesia in burn populations
 - Ventilator management
 - SAT/SBTs
 - Resuscitation, surgical, and infection prevention considerations
- **RNs**
 - Titrating medication appropriately for pain management, sedation, and vent synchrony when applicable
 - ABCDEF Bundle



- **RTs**
 - SBTs, comfort, expiratory training, ETT security
- **OT/PT/ST**
 - Mobility
 - Delirium/cognition
 - ADLs & routines
 - Environmental recommendations
 - Family education
 - Communication
 - Swallowing
 - Pulmonary/inspiratory muscle training
- **Family/caregivers**
 - Routines & environment
 - Familiar sensory inputs (voice, touch, music)



Source: <https://www.icudelirium.org/medical-professionals/overview>



Therapy's Role in Addressing Delirium



- **Work in coordination with team**
 - OR planning
 - Medical work-up and goals
 - Need for resuscitation
 - Trends in medical stability
 - Surgeon post-op precautions/restrictions
- **Develop and know parameters for cardiorespiratory stability**
 - Ventilator settings & medication titration
 - Vitals parameters at rest vs during activity
- **Understand effect of mobility on necessary medical devices**
 - Endotracheal tubes (how is it secured?)
 - Fresh tracheostomies (does your facility have specific precautions/guidelines?)
 - Vascular lines (femoral vs radial access)
- **Active participation from patient (i.e. sedation levels)**
- **Progressive levels of mobility**
 - Supine > head of bed raised
 - Head of bed raised > edge of bed
 - Edge of bed > standing
 - Standing > chair
 - Chair > walking



Basic

- **Re-orientation**
 - Person
 - Place
 - Situation
 - Time of day
 - Date
- **Reality orientation**
 - Looking beyond the hospital bed
 - Self-orientation (using the environment to re-orient yourself)
- **Simple 1-step command following**
- **Simple/familiar ADLs**
- **Sensory stimulation**

More Complex

- **Multi-step ADLs**
- **Card games/board games**
- **Simple/advanced problem solving**
- **IADLs**

- **Consistency is key**
 - Short 10-15 min sessions at the same time every day is best
- **May require a separate treatment session from burn treatment**
- **Combine these interventions with mobility for maximum effectiveness**



- **Environment**
 - Minimize distractions
 - Control sensory stimulation
 - Light/dark cycles with day/night cycles
- **Communication**
 - Begin sentence with patient's name
 - Speak slowly in brief, simple sentences (i.e. "Mr. Jones, you are at Parkland Hospital")
 - Pause for at least 10 seconds between commands or information
 - Repeat re-orientation information 3+ times during session to improve carry-over
- **Family education and involvement**
 - Introduce delirium prevention concepts early
 - Familiar voices, smells, music, and touch where able
- **Routines & schedules**
 - Sleep/wake cycles
 - Daily burn care & therapy at consistent times



■ **Concern for adverse events with early mobilization (Cartotto et. al, 2023)**

- In literature, considered low-risk and low occurrence in general ICU populations (<2-5%)
- Unique considerations for burns:
 - Loss of airway due with face/neck edema
 - Loss of vascular catheters when there is limited access
 - Burn surgeon preference on post-op mobilization

■ **Pain & sedation management**

- Increased use of sedatives for pain management
- Frequent sedation and anesthesia for wound care and surgery

■ **Time management & staffing**

- Treatment priorities with individual patient
- Case load
- Division (or no division) of roles between OT/PT



- Delirium may be overlooked during ICU/acute stay (no documentation or intervention)
- Confounding factors for recognizing delirium
 - frequent OR/sedation
 - prior or newly developing psych concerns
 - previous or new cognitive impairment
- Post-ICU Syndrome and long-term effects of delirium may have significant impact on psychosocial recovery and community re-integration. (Brummel et. al, 2014; Pandharipande et. al, 2013)
 - Translated into burn populations, even more challenges that burn survivors face than general ICU survivor populations
- Early intervention and advocacy once delirium or residual cognitive impairments are recognized is imperative!



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Case Study



Annie is a 57 y/o woman admitted to the burn ICU after a house fire with Grade IV inhalation injury and 57% TBSA (face, neck, BUE, chest, back, and plantar feet).

She remains orally intubated on day 3 of admission. Initial debridement is planned for later today, but the burn team plans to complete a SAT and SBT this morning (does not plan to extubate until after OR if able).

1. What risk factors are present for Annie to develop delirium?
2. What protective factors might be implemented from the therapy perspective at this point in her care?



Annie is a 57 y/o woman admitted to the burn ICU after a house fire with Grade IV inhalation injury and 57% TBSA (face, neck, BUE, chest, back, and plantar feet).

Three weeks into admission, she is now extubated (at 1.5 weeks) but remains in the ICU due to sepsis watch. She is surgically complete at face, neck, and BUE although with some areas of graft failure. During therapy sessions, Annie has a flat affect with poor initiation and engagement in therapy interventions. You notice that her room is typically dark when you arrive. She remains AOx4.

1. What risk factors are present for Annie to develop delirium?
2. What assessments or identifying factors would indicate the presence/absence of delirium?
3. What protective factors or interventions might be implemented from the therapy perspective at this point in her care?



Annie is a 57 y/o woman admitted to the burn ICU after a house fire with Grade IV inhalation injury and 57% TBSA (face, neck, BUE, chest, back, and plantar feet).

Three months after admission, including 3 weeks of IPR, Annie is now transitioning home with her son and begins burn rehab at your outpatient clinic. She remains flat and withdrawn during your initial evaluation but does express that she does not remember much of her inpatient admission, mostly just the last 2-3 weeks. Her son reports that he has to consistently remind her to wear her orthotics and get off the couch to move around during the day.

1. What factors from a rehab perspective are you going to consider assessing and addressing as Annie transitions home?
2. What education might be helpful for Annie and her son to improve her success in transitioning to home and the community?



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