Traumatic Brain Injuries (TBI)

as a blow to the head

Headache

Dizziness

Irritability

Depression

worsens

Poor balance

· Poor vision/double vision

Nausea or vomiting

Fatigue or drowsines

Problems with speech

· Confusion or disorientation

Sensitivity to light or sound

· Feeling "dazed" or "in a fog

Convulsions or seizures

Inability to wake up from sleep

Moderate to Severe TBI:

· Loss of coordination

Profound confusion

unusual behavior

processing speed

Memory impairment

Impaired judgement

statements or behavior

Personality change

Lack of initiative

Irritability and anger

to do in the future

you want to say

changes

Slurred speech

Difficulty sleeping or sleeping more

Loss of consciousness (few seconds to

• Memory or concentration problems

· Persistent headache or headache that

Dilation of one or both pupils of the

• Clear fluids draining from the nose or

Weakness or numbness in fingers and

Agitation, combativeness, or other

Slowed thinking – impaired cognitive

Difficulties inhibiting inappropriate

Difficulties planning and organizing

Difficulties remembering what you are

Problems with monitoring your own

Difficulties thinking of the words that

thought and inability to shift thoughts

or behavior from one task to another

Decreased emotional control – rapid

Difficulties getting stuck on one

Impaired problem-solving and

• Emotional lability – rapid mood

Inappropriate social behavior

Impaired insight or awareness

Coma and other disorders of

cquired Brain Injury (ABI)

but by internal factors such as stroke.

Sudden numbness or weakness,

or understanding speech

known cause

coordination)

hearing problems)

• Severe cases can lead to

unconsciousness or coma

especially on one side of the body

Sudden confusion, trouble speaking

Sudden trouble walking, dizziness,

loss of balance, or coordination

Sudden severe headache with no

ypoxic or Anoxic Brain Injury:

Sensory impairments (vision o

Behavioral changes (irritability,

Cognitive impairments (memory

problems, difficulty concentrating)

Physical impairments (weakness, poo

Sudden trouble seeing in one or both

ABIs are not caused by external trauma

Problems with understanding or

Over-talkativeness

expressive speech

Impaired perception

infection, or lack of oxygen.

consciousness

Difficulties staying on track in

Mild TBI (Concussion):

TBIs are caused by an external force, such

LIMB LOSS

CARE

Limb loss, whether congenital (present at birth) or acquired

- Risk of infection at the site of amputation, especially if proper

- Joint stiffness or muscle shortening, leading to limited range of

- Emotional responses related to the loss of a part of the body,

- Can occur if the limb loss is due to a traumatic event, leading

- Difficulty walking or moving, which may require the use of

assistive devices like prosthetics, wheelchairs, or crutches

Difficulty performing everyday tasks such as dressing, bathing

- Strain on relationships with family, friends, and partners due

- Workplace and recreational adaptations may be needed

- Limitations in participating in hobbies and sports, though

• Postsurgical stabilization: postsurgical care is provided to

Pre-prosthetic rehabilitation: independence in mobility and

daily activities is achieved with use of assistive devices (e.g.,

Limb healing and maturation: sutures are removed.

scabs resolve, functional evaluation for prosthetic device

Prosthetic fitting: prosthetic device is made and fitted to

activities is achieved with use of the prosthetic device.

Prosthetic rehabilitation: independence in mobility and daily

Medical discipline that manages and oversees comprehensive

Therapy discipline that helps with learning how to perform

Therapy discipline that helps with learning how to perform

- Medications, nerve blocks, or alternative therapies like

address emotional and psychological needs

shared understanding and encouragement

Counseling, support groups, and mental health services to

Connecting with others who have experienced limb loss for

- Feelings of isolation due to decreased mobility or self-

with various physical and psychological conditions

- Pain in the remaining part of the limb

hygiene and care are not maintained

- Poor blood circulation in the residual limb

which can be akin to the grieving process

- Painful nerve ending growths in the residual limb

- Feelings of self-consciousness or dissatisfaction with

mobility, independence, and social acceptance

to flashbacks, nightmares, and severe anxiety

Post-Traumatic Stress Disorder (PTSD)

- Skin irritation, ulcers, or sores

Phantom limb pain

prosthetic device

Circulatory problems

Grief and loss

Body image issues

**Mobility limitations** 

cooking, and driving

Relationship strains

Social isolation

**Daily living activities limitations** 

consciousness about appearance

Occupational participation restrictions

adaptive sports and activities, are available

wheelchair or walker for lower limb loss)

Physical Medicine and Rehabilitation

rehabilitation care for limb loss

Physical Therapy

daily activities

Pain Management

Psychological Support

mobility and transfers

Occupational Therapy

acupuncture to manage pair

prescription is completed

Recreational participation restrictions

Social and Lifestyle Impacts

appearance after limb loss

REHABILITATION

Symptoms and Conditions Associated with

recovery of lost functions such as movement, speech, or

cognition after a stroke or traumatic brain injury (TBI).

Learning and Memory: Neuroplasticity underlies the

changes that improve motor function in individuals with

hearing loss, blindness) may experience changes in other

pain conditions, such as phantom limb pain or complex

legative Outcomes (Maladaptive Neuroplasticity)

fibromyalgia or chronic lower back pain).

symptoms of PTSD.

sensory systems, like improved tactile or auditory sensitivity

interventions like mirror therapy or graded motor imagery.

Chronic Pain Syndromes: Maladaptive changes in the brain

even after the initial injury has healed (e.g., in conditions like

Post-Traumatic Stress Disorder (PTSD): Neuroplastic

**Addiction:** Repeated exposure to addictive substances of

behaviors can cause neuroplastic changes that reinforce

Tinnitus: Abnormal neuroplastic changes in the auditory

pathways can lead to the perception of phantom sounds

in motor circuits can contribute to abnormal movements or

muscle contractions seen in conditions like dystonia.

Stroke and Traumatic Brain Injury (TBI): Both condit

the extent of recovery depends on factors such as the

severity of the injury and the effectiveness of rehabilitation

function in the presence of demyelination and neuronal

Parkinson's Disease: Neuroplasticity plays a role in

therapy is crucial to maximize functional outcomes.

Alzheimer's Disease: Neuroplasticity may initially help

progresses, the brain's capacity for plasticity diminishes.

Age: Neuroplasticity is generally more robust in younger

Physical and Cognitive Activity: Regular physical exercise

and engaging in mentally stimulating activities can enhance

n summary, neuroplasticity plays a critical role in both recovery

essential for promoting healthy neuroplastic changes.

Sleep and Nutrition: Adequate sleep and proper nutrition are

individuals but remains possible throughout life.

techniques, can promote positive neuroplasticity.

compensate for early cognitive decline, but as the disease

damage, although it can be limited by disease progression.

addictive patterns and make them harder to break.

persistence of depression and anxiety disorders.

(tinnitus) without an external auditory source.

changes related to stress and trauma can lead to the

and nervous system can contribute to the persistence of pain.

conditions like Parkinson's disease or after a stroke.

Positive Outcomes (Adaptive Neuroplasticity)

better cognitive functioning.

under which it occurs

# **CROSS-**

KEYWORD SEARCH

interdisciplinary rehabilitation research event

This poster is an overview of popular topics covered at the ACRM Annual Conference — the world's largest

Please go to the **ACRM online** program ACRM.org/op and

search for the keywords and topics

of interest.

Use this poster as a guide

**CUTTING** Aging Research & Geriatric Rehabilitation

Artificial Intelligence

Arts and Neuroscience **Assistive Technology** 

Athlete Development & Sports Rehabilitation

**Behavioral Health Sciences** Big Data

Burn Rehabilitation Caregiver Needs

Clinical Practice

Complementary Integrative Rehabilitation Medicine COVID-19 and Long COVID

Cultural Competency Diversity, Equity & Inclusion

Early Mobilization & Rehabilitation in the Intensive Care Unit

**Ethics** Health Services Research

International Leadership

Learning Disabilities Lifestyle Medicine

Limb Care (including prosthetics/orthotics)

Machine Learning Measurement

Military/Veterans Affairs Neuroplasticity

Ortho / Skeletal Pediatric Rehabilitation

Rehabilitation Treatmen Specification System Skin Management

Spasticity

Technology **Telehealth** Trauma

Writing Grants & Getting

## **MEDICAL ROLES** of those involved >>>

Case Manager Cognitive Therapist Neuro-ophthalmologist Neuropsychologist Neurosurgeon Neuropsychiatrist Neurologist

Occupational Therapist Orthopedic Surgeon Physical Therapist Psychiatrist Psychologist Rehabilitation Nurse Recreational Therapist

Social Worker Speech-Language Vocational Rehabilitation

name you want to say

or feeling in speech

Speech sounds flat

Not being able to understand the

rhythm or tone or feeling in speech

Difficulties expressing rhythm or tone

Misinterpreting someone else's moo

Not seeing everything/having blind

Changes in vision or hearing

Sensitivity to light or sound

Impaired sense of touch

Poor vision/double vision

and related issues

Infection (e.g., Encephalitis, Meningitis): • Sudden changes in behavior or

Severe headache

Stiff neck

Nausea or vomiting

Sensitivity to light

Cognitive impairments:

processing speed

Memory problems

Impaired judgment

to do in the future

Difficulty concentrating

Feeling "dazed" or "in a fog"

Long-term conditions and effects

Slowed thinking — impaired cognitive

Impaired attention and concentration

Confusion or disorientation

inal Cord Injuries (SCI) can have a wide range of symptoms and conditions, depending on the location and severity of the injury. These injuries can result in partial or complete loss of motor control and sensation below the level of the injury. Here are some common symptoms and conditions associated with spinal cord injuries.

• Loss of movement: Inability to move parts of the body below the level of the injury Loss of sensation: Numbness or loss of sensation including the ability to feel heat, cold, and touch Loss of bladder or bowel control: Difficulty or

inability to control bladder or bowel functions Exaggerated reflex activities or spasms: Uncontrolled movements, muscle spasms, or exaggerated reflexes Pain or intense stinging sensations: Pain or a

onditions associated with spinal cord injury

Tetraplegia (Quadriplegia): Paralysis of all four

from injuries to the cervical (neck) region of the

Paraplegia: Paralysis of the lower half of the body

injuries to the thoracic, lumbar, or sacral regions of

Pressure sores (bedsores): Skin ulcers caused by

prolonged pressure on the skin, common in areas

where bones are close to the skin (e.g., hips, heels,

infections and reduced lung function, particularly

threatening condition where blood pressure rises

Spasticity: Increased muscle tone or stiffness,

**Chronic pain:** Persistent pain due to nerve damage

to dangerous levels due to stimuli below the level of

with high-level spinal cord injuries

Autonomic dysreflexia: A potentially life-

leading to uncontrollable muscle spasms

Respiratory problems: Increased risk of respiratory

(legs and lower torso), typically resulting from

limbs (arms and legs) and the torso, usually resulting

burning sensation caused by nerve damage in the Difficulties planning and organizing Difficulties staying on track in Difficulty breathing, coughing, or clearing secretions: Problems with respiratory functions in the injury is at a high level in the cervical spine Difficulties remembering what you are Loss of blood pressure control and temperature

ypes of paralysis

the spinal cord

Difficulties getting stuck on one thought and inability to shift thought or behavior from one task to another Impaired problem-solving and Inappropriate social behavior

 Over-talkativeness Impaired insight or awarenes Physical — Medical Impairments: Paralysis or weakness in limbs Poor coordination or balance Chronic pain Headache

 Impaired attention and concentration Nausea or vomiting Fatigue or drowsines: Difficulty sleeping or sleeping more Loss of consciousness

> Convulsions or seizures Dilation of one or both pupils of the · Clear fluids draining from the nose of Coma and other disorders of

or musculoskeletal issues Bladder and bowel dysfunction: Ongoing issues Difficulties swallowing with urinary and fecal incontinence or retention, Emotional and behavioral changes Sexual dysfunction: Changes in sexual function, Anxiety fertility, and sensation Cardiovascular issues: Risk of low blood pressure

 Aggression, agitation and (hypotension) or high blood pressure (hypertension) combativeness as well as problems with heart rate regulation Irritability Deep vein thrombosis (DVT): Increased risk of blood clots forming in the legs, which can lead to Difficulties inhibiting inappropriate pulmonary embolism statements or behavior Osteoporosis and fractures: Loss of bone density Personality change below the level of injury, increasing the risk of

 Decreased emotional control – rapid sychological and social effects Emotional lability - rapid mood Depression and anxiety: Emotional and psychological challenges, including depression Speech and language and related issues anxiety, and adjustment disorders Difficulty speaking or understanding **Social Isolation:** Reduced social interaction and

participation in activities due to physical limitations Slurred speech and mobility issues Difficulties thinking of the words that Employment and financial issues: Challenges in you want to say returning to work or finding suitable employment, Problems with spelling, writing, leading to financial difficulties arithmetic Mispronouncing words

Note: Early intervention, rehabilitation, and support are Saying the wrong words crucial for managing spinal cord injuries and improving Difficulties thinking of the word or quality of life for individuals affected by them. If you suspect someone has a spinal cord injury, it is important Visuoperceptual and visuoconstructiv Difficulties interpreting what you see the person to prevent further damage. Not being able to copy drawings Difficulties recognizing people Difficulty assembling things

Specialist

Neurologist

DOCTORS

Neurosurgeon Specialist



Specialist Nurse Therapist Psychologist or Urologist

Social Worke Psychiatrist Vocational Pulmonologist Rehabilitation Counselor

**PHYSICAL** 

Assistive Technology

Clinical Psychologis

Neuropsychologist

Nurse Practitioner

Neurologist

Occupational

Therapist

Specialist

Case Manager

A stroke occurs when the blood supply to part of the brain is interrupted or reduced, preventing brain tissue from getting oxygen and nutrients. Brain cells begin to die in minutes, making it a medical emergency that requires prompt treatment. Recognizing the symptoms and understanding the conditions that can lead to a stroke are crucial for early intervention

Possible signs of stroke Sudden numbness or weakness - In the face, arm, or leg, especially on one side of the body

Trouble speaking or understanding speech

Sudden trouble seeing: - In one or both eyes Sudden trouble walking - Dizziness, loss of balance, or lack of coordination Sudden severe headache - With no known cause

Hemiplegia Hemiparesis/Plegia Vision deficits Cognitive deficits Abnormal tone • Weakness or paralysis Sensory deficits

Dysphagia/Swallowing deficit Deficits in mobility Deficits in self-care/ADI Deficits in IADL Deficits in communication • Hemianopsia

> Conditions leading to stroke High blood pressure (Hypertension) The most significant risk factor for stroke. Chronic high blood pressure can damage blood vessels and lead to stroke

- Conditions like coronary artery disease, heart failure, and atria fibrillation can increase the risk of stroke - High blood sugar levels can damage blood vessels over time, increasing stroke risk

Can lead to the formation of plaques in blood vessels, increasing the risk of ischemic stroke - Increases the risk of stroke due to associated conditions like high blood pressure, diabetes, and heart disease

- Damages blood vessels and increases the risk of clot formation - Increases the risk of developing conditions that lead to stroke • Heavy alcohol use:

Family history and genetics: - A family history of stroke or genetic conditions can increase risk - Risk increases with age, particularly after 55

- Stroke risk is higher in women, especially during pregnancy and Race and Ethnicity: - African Americans have a higher risk of stroke than people of

other races and ethnicities

Ischemic Stroke: - Caused by a blockage in an artery supplying blood to the brain. This is the most common type of stroke

Hemorrhagic Stroke: - Caused by bleeding in or around the brain. This can result from a ruptured aneurysm or weakened blood vessels Transient Ischemic Attack (TIA): - Often called a mini stroke, it is a temporary period of symptoms similar to those of a stroke. TIAs don't cause



Speech-Language Pathologist Medicine and Stroke Care Coordinator Rehabilitation Physician) Surgeon (e.g., Vascular Surgeon, Physical Therapist Recreational Neurosurgeon) Therapist Vocational Rehabilitatior Rehabilitation Nurse

Respiratory

herapists, and support networks, to address the wide range of hysical, emotional, and social challenges. Rehabilitation Engineer

Certified Prosthetist Physical Therapist Social Worker Clinical Psychologist Physiotherapist

**Cancer** is a complex group of diseases with a wide range of symptoms and conditions, depending on the type, location, (due to trauma, disease, or surgical removal), can be associated and stage of the cancer. Here are some general symptoms and conditions associated with cancer

- Sensation of pain in part of the limb that is no longer present • Unexplained weight loss: Significant and unintentional weight loss can be an early sign of cancer • Fever: Persistent or recurring fever can indicate cancer, particularly if it is due to an immune response or cancer itsel - Swelling in the residual limb, which can affect the fitting of a • Fatigue: Extreme tiredness that doesn't improve with rest can be a symptom of cancer • Pain: Persistent pain, such as headaches, back pain, or pain

in bones can be a symptom of certain cancers Skin changes: This can include darkening of the skin, yellowing of the skin and eyes (jaundice), reddened skin, itching, nail changes or excessive hair growth Specific symptoms by cancer type

- Lump in the breast or underarm Change in breast shape or size Dimpling or puckering of the skin Nipple discharge or inversion Persistent cough

Coughing up blood Shortness of breath Chest pain rostate cancer: Trouble urinating Blood in urine or semen

Erectile dysfunction - Feelings of sadness, hopelessness or loss of interest in activities Discomfort in the pelvic area - Can be exacerbated by changes in body image and lifestyle lorectal cancer: Changes in bowel habits - Worry or fear about the future, including concerns about Changes in the caliber of stool Blood in stool Persistent abdominal discomfo

> Unexplained weight loss kin cancer (Melanoma): · New or changing moles or skin lesions Asymmetry, irregular borders, multiple colors, or large diameter of a mole Itching, tenderness, or bleeding of a mole

Frequent infections Easy bruising or bleeding Swollen lymph nodes Unexplained fevers or night sweats

Swollen lymph nodes Night sweats Pancreatic Cance laundice Upper abdominal pa

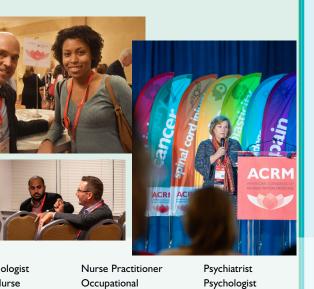
Loss of appetite Weight loss Nausea/Vomiting Conditions Associated with Cancer • Metastasis: Spread of cancer from one part of the body to

 Paraneoplastic Syndromes: Conditions caused by the immune response to cancer, affecting nerves, muscles, and Cachexia: Severe weight loss and muscle wasting, often seen in advanced cancer

Anemia: Low red blood cell count, causing fatigue and Hypercalcemia: High calcium levels in the blood, causing

nausea, vomiting, and confusion Infection: Increased susceptibility to infections due to a weakened immune system • Leukocytosis/Leukopenia: Abnormally high/low (respectively) white blood cell count

• Thrombocytopenia: Abnormally low platelet count Note: The presence of these symptoms does not necessarily mean one has cancer, as they can be caused by other conditions. It is important to seek medical evaluation for a proper diagnosis



Occupational Therapist Oncologist Radiologist **Pathologist** Genetic Counselor Pharmacist Medical Oncologist Physical Therapist

Physician Assistan

Specialist Case Manager Radiation Oncologist Clinical Geneticist Clinical Pharmacist Registered Nurse Clinical Psychologist Social Worker Dietitian Surgical Oncologist Genetic Counselor Movement Disorder

progressively worsen. The degeneration or death of nerve cells eventually affect various functions of the nervous system, leading to gradual decline in activities of daily living and quality of life. However rehabilitation can improve symptoms of neurodegeneration and potentially delay the progressive decline in day-to-day activities. Here are some common neurodegenerative conditions, along with

**DISEASES** 

tive diseases are neurological conditions that

their symptoms and conditions: - Symptoms should be severe enough - Memory loss to interfere with a person's ability complete daily activities (e.g., work

- Difficulty with planning and problemmanage finances Trouble with speaking and writing - Plaques and tangles in the brain - Loss of brain cells (neurons) Disorientation to time and place Changes in mood and personality - Loss of synapses (connection Symptoms should be slow to develop and - Atrophy of brain tissue

Parkinson's Disease Motor and non-motor features · Tremor, primarily at rest Slowed movement (bradykinesia) Muscle stiffness (rigidity) - Speech and writing changes Impaired gait, posture and balanc Muscle weakness - Loss of dopamine-producing neuro · Cognitive impairment - Presence of Lewy bodies (abnormal

· Anxiety, depression, pain - Significant Involvement of brain and gut (gut-brain axis) - Cognitive decline nvoluntary jerking or writhin Behavioral disorders movements (chorea)

aggregates of protein)

- Genetic mutation in the HTT gene muscle contracture (dystonia) · Slow or abnormal eye movements Impaired gait, posture, and balance Difficulty with speech and swallowing

Muscle problems, such as rigidity or

- Muscle cramps and twitching

- Fluctuating cognitive function

Visual disturbances

Amyotrophic Lateral Sclerosis (ALS) - Degeneration of motor neurons in th - Muscle weakness and atrophy - Difficulty speaking, swallowing, and brain and spinal cord

Progressive paralysis Weakness and spasticity in one or more

Changes in sensation such as numbness - Immune system attacks the protect Difficulties with coordination sheath (myelin) covering nerve fiber Disruption of communication between - Balance issues and unsteady gait brain and the rest of the body

- Degeneration of the frontal and temporal - Changes in personality and behavior Impaired judgment and problem-solving lobes of the brain - Language difficulties (aphasia) ccumulation of abnormal proteins suc

as tau or TDP-43 Motor symptoms similar to those seen in ALS or Parkinson's **Lewy Body Dementia** - Visual hallucinations - Presence of Lewy bodies in the brain Movement disorders similar to Parkinson's - Loss of dopamine-producing neurons

- REM sleep behavior disorder - Depression and apathy Prion Diseases (e.g., Creutzfeldt-Jakob Disease) - Rapidly progressive dementia - Abnormal folding of prion proteins - Muscle stiffness and twitching - Rapid brain damage Coordination and balance problems

General conditions in neurodegenerative diseases Affects individuals of all ages, but certain neurodegenerative diseases (e.g., Alzheimer) disease, Parkinson's disease) are more common among adults aged 65 and older Progressive loss of structure or function of neurons, including death of neurons Accumulation of abnormal proteins

Genetic and environmental factors (pesticide exposure, chemicals, solvents) contributin to disease onset and progression Symptoms often worsen over time, leading to significant impairment in daily functioning Note: Early diagnosis and multidisciplinary, patient-centric,

ntegrated management through scientifically validated interventions are crucial components to slow, halt, or reverse progression, manage symptoms, and restore quality of life for all people living with neurodegenerative diseases. Palliative Care Specialist Neuropsychologist

Rehabilitation Physician) Vocational

Occupational Therapist Respiratory Therapist

Nurse Practitioner

Pain Management

Physiatrist (Physical

Physical Therapist

Recreational Therapist

Rehabilitation Nurse

Social Worker

Surgeon (e.g.,

Speech-Language

Specialist Pharmacist Clinical Psychologist Physical Therapist

Psychologist

Social Worke Sports Medicine Nurse Practitioner Physician Assistant Occupational Therapist Psychiatrist

BURN refers to injuries to the skin caused by heat, electricity, chemicals, radiation, or friction. The severity of burns is categorized by depth of burn and the injuries to the underlying tissues of the skin, each with its own symptoms and conditions

- Minor inflammation (swelling)

Superficial Burn

**PAIN** can present with various symptoms and is associated

with numerous conditions. Here's a comprehensive overview

• Sharp pain: Sudden and intense, often described as

Tingling or numbness: Pins and needles or loss of

• Radiating pain: Spreads from one area to another

• It is important to distinguish pain as a symptom vs.

pain as a condition in and of itself. Pain is a complex

and multifactorial experience associated with many

Acute pain may result from injury, illness, and dysfunction of

body systems, including nervous and endocrine dysfunction.

Chronic pain, lasting more than three months or longer than

the expected duration of recovery is especially complex and

Pain can be described as nociceptive (resulting from a known

pathology), neuropathic (resulting from dysfunction of a nerve

experiences and potential roles from central sensitization and

or nerves), and neuroplastic (resulting from long-term pain

autonomic dysfunction or psychological components).

Conditions associated with Pain

Musculoskeletal conditions:

Tendinitis

Sciatica

Lupus

Fibromyalgia

Muscle strains

Bone fractures

Neuropathic conditions

Diabetic neuropathy

nflammatory conditions

• Rheumatoid arthritis

Headache disorders:

Tension headaches

Gastrointestinal conditions:

Cardiovascular conditions

Peripheral artery disease

Reproductive system conditions:

Irritable bowel syndrome (IBS)

Cluster headaches

Post-surgical pain:

Infectious diseases

Endometriosis

Prostatitis

Skin conditions:

Depression

Shingles

Menstrual cramps

Psychological conditions:

Pain severity and duration

Anxiety disorders

Migraines

Carpal tunnel syndrome

• Postherpetic neuralgia (e.g. shingles)

• Inflammatory bowel disease (IBD)

Tumor growth, causing pressure

Pain following surgical procedures

Gastroesophageal reflux disease (GERD)

Angina (chest pain from heart issues)

· Infections like cellulitis, abscesses, or osteomyelitis

Pleurisy (inflammation of the tissues lining the lungs and

• Acute pain: Short-term pain, usually lasting less than three

months, often associated with injury or surgery

months, often linked with chronic condition

more about, ask your healthcare provider.

Chronic pain: Persistent pain lasting longer than three

with chronic pain, despite regular pain management

Note: Understanding pain's nature, underlying causes, and

symptoms is crucial for effective diagnosis and treatment. If

you have specific symptoms or conditions you'd like to know

Breakthrough pain: Sudden flare-ups of pain in someone

on nerves, bones, or organs

requires careful management to prevent disability.

Dull pain: Persistent, aching sensation

Throbbing pain: Rhythmic, pulsing pain

• Burning pain: Sensation of heat or burning

• Localized pain: Confined to a specific area

Intermittent pain: Comes and goes

stabbing or shooting

specific location

than three months

- Dry, peeling skin (occurs as the burn heals) - Only affects the outer layer of the skin (epidermis) Generalized pain: Widespread pain, not confined to a - Will heal without medical intervention within 3-7 days

Superficial-Partial Burn • Chronic pain: Lasts for an extended period, usually more - Red, blistered skin - Severe pain

- Wet, shiny appearance due to fluid loss - Extends beyond the outer layer to the first layers of underlying skin layer (dermis) - May cause minimal scarring

- Approximately 7-14 days to heal - May require medical attention and use of topical ointment Deep-Partial Burn - Red or white blistered skin

- Usually non-blanching, meaning limited blood flow to the area - May have sloughing off of top layer of skin - Burn damages the epidermis and dermal layers of skin

- Requires medical treatmen » Medical treatment from a burn center is recommended - May require surgical debridement of damaged tissue

- May require a skin graft or synthetic skin covering to assist in healing and decrease the risk of infection - May take 3 or more weeks to heal - Will result in scarring of the injured area - May require specialized burn rehabilitation, especially if affected areas are on the hands or joint surfaces

White or blackened, charred skin - Numbness or lack of sensation or pain due to nerve damage - Waxy, leathery texture - No pain in the burned area, but surrounding areas may be

- Destroys both the epidermis, dermis, and potentially Requires immediate medical attention Transfer to specialized burn center is required Skin grafts will be required

Grafted skin will significantly scar and limit mobility and - Specialized burn rehabilitation will be required to maximize function and decrease risk of contracture from hypertrophic

Complications and conditions associated with burns • Infection: The risk increases with the severity and depth of the burn. Infection is the leading cause of mortality in full-thickness burn with large burn area

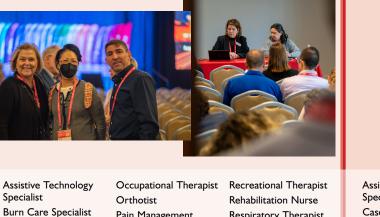
• **Dehydration:** Severe burns can cause significant fluid loss Hypothermia: Due to the loss of skin, the body can lose heat

• Shock: From severe pain and fluid loss • **Scarring:** Even with treatment, burns can leave significant Contractures: Tightening of the skin, muscles, and tendons can limit mobility

hen to seek medical attention - Burns covering large areas of the body - Burns on the face, neck, hands, feet, groin, or major joints Deep-partial and full-thickness burns Burns caused by chemicals, electricity, or radiation Signs of infection (increased pain, redness, swelling, drainage, development of fever)

- Inhalation injury due to breathing in smoke from flames

Note: It's crucial to assess the severity of a burn correctly and provide appropriate care to prevent complications and promote



Rehabilitation Physician) Rehabilitation

Respiratory Therapist Social Worker Pediatric Specialist (i Speech-Language Child Life Specialist (for applicable) Pathologist (if applicab

for facial burns)

Counselor

ts effects can be shaped by therapeutic interventions, lifestyle actors, and underlying health conditions.

Assistive Technology Case Manager Neuropsychologis Clinical Pharmacist Clinical Psychologist Cognitive Rehabilitation

**PROGRESS IN** 

Neuroscientist (research-focused) Medicine and Rehabilitation

Nurse Practitioner

Occupational Therapist Physiatrist (Physical

Social Worker Speech-Language Pathologist Rehabilitation

**ACRM** is the home of the Archives of Physical Medicine and Rehabilitation & Archives of Rehabilitation Research & Clinical Translation



# **ACRM WELCOMES EVERYONE**

Management

NURSES THERAPISTS **CAREGIVERS** CASE • **MANAGERS** PSYCHOLOGISTS PHYSICIANS **HEALTH CARE®** → REHABILITATIVE **EXECUTIVES** COUNSELORS **RESEARCHERS** 

SPEECH-LANGUAGE PROFESSIONALS HOSPITAL SOCIAL WORKERS





Medical Physicist



Pain Management



**ACRM** 101st Annual Conference

YEARS

Case Manager

Clinical Psychologist

Nurse Practitioner

pediatric burn patients) Physiatrist (Physical

Medicine and

Plastic Surgeon

Physical Therapist

**REHABILITATION** RESEARCH **TRANSLATION** TO CLINICAL PRACTICE



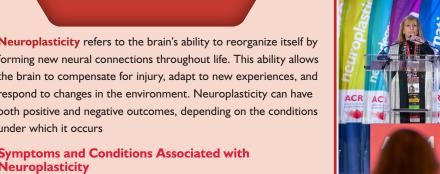


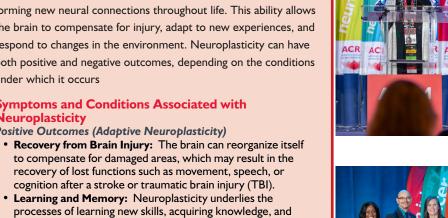
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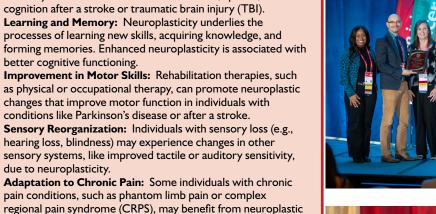
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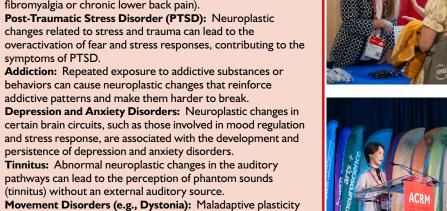
Dozens of ACRM community meetings are scheduled. Most are OPEN to ALL. Find your home here — among all the leaders in rehabilitation.

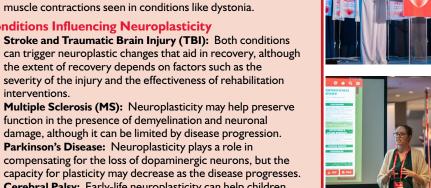
**leuroplasticity** refers to the brain's ability to reorganize itself by forming new neural connections throughout life. This ability allows the brain to compensate for injury, adapt to new experiences, and

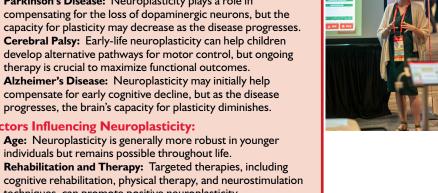




















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**ACRM WW PRE-CONFERENCE** THURSDAY 31 OCT

ACRM VV

YNOTE PRESENTER Network with SANDRA B. CHAPMAN, PhD course speakers ounder & Chief Director, Center for BrainHealth™; Dee Wyly Distinguished other early career iversity Professor, Behavioral and Brain ences, University of Texas at Dallas members, and ACRM leaders.

Drew Nagele PsyD, ABPP, FACRM, CBIST-AP.

Felicia Connor PsyD, ABPP-RP, NYU Langone

Tanya Brown PhD, LP ABPP-Cn, Mayo Clinic

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**IEFFREY BURNS**, MD, MS;

PRE-CON

TUESDAY 29 OCT

**MORNING** 8:30 AM - 12:30 PM

**VEDNESDAY 30 OCT** 

**MORNING** 8:30 AM - 12:30 PM

Practical Workshop

AFTERNOON 1:30 PM - 5:30 PM

Professor, University of Kansas

Medical Center

**Instructional Courses** 

IC10 Applied Measurement for Clinicians, Educators, Students & Administrators

IC2 Rehabilitation for Functional Neurological Disorder — the Works

IC3 Approach to Unique Challenges in Pediatric Inpatient Rehabilitation

ICI2 Influencing Practice and Policy Impact — There's a Playbook for That!

ICI4 Vestibular Rehabilitation, Testing & Concussion Management

ICI Sports Vision — See Better, Practice Smarter, Play to Win

Processes for Target Audiences in Learning Health Systems

MORNING & AFTERNOON 8:30 AM - 5:30 PM

IC5 Longitudinal Data Analysis and Practical Workshop Using R: PART I: Introductory Topics

IC4 Staying Up-to-date WHO Wheelchair Provision Guidelines & Manual Wheelchair Skills

IC6 Longitudinal Data Analysis and Practical Workshop Using R: PART 2: Advanced Topics

IC15 Facility Dogs: Canine Catalysts for Optimizing Human Health, Performance & Engagement

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BrainMatters Neuropsychological Services, PLLC Hospitals

TWO-DAY WORKSHOP 29 – 30 OCT PRE-

Amy M. Shapiro-Rosenbaum Brooke M. Murtaugh Katy H. O'Brien

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IC9 Integrating Human-Centered Design Strategies to Innovate Tailored Products &

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IC7 Applications of Electrical Stimulation from Exercise to Neuromodulation: PART I

Rehabilitation"

**PLENARY I** 

BRIAN DOWNER, PhD, Associate Professor, **DEBORAH BACKUS**, PT, PhD, FACRM and Innovation, Shepherd Center

JEREME WILROY, PhD; Associate Professor, Jniversity of Alabama at Birmingham

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Although significant schedule changes are not anticipated, schedules, sessions and presenters are subject to

change. Please excuse typos. For the latest, please refer to the searchable online program: ACRM.org/op.

SHARED KEYNOTE PRESENTER SANDRA B. CHAPMAN, with breakouts and panel & critical connections.

**ACRM WW PRE-CONFERENCE** 

Leadership Development Course

BRAD KUROWSKI, MD, MS; Professor, University of Cinncinati Children's Hospital PAMELA ROBERTS, Phd, OTR/L, SCFES, FAOTA, CPHQ, FNAP, FACRM; ACRM President 2019 - 2024: Executive Director, Office of Chief Medical Officer: Executive Director and Professor, Physical Medicine and Rehabilitation; Co-Director, Division of nformatics, Department of Biomedical Sciences, Cedars-Sinai; Sr. Director, Quality, DEBORAH BACKUS, PT, PhD, FACRM; ACRM President 2017 - 2019; Vice President

THURSDAY 31 OCT Susan H. Lin, scb, OTR/L, FAOTA, Workshops, roundtables, discussions. Valuable topics Mentorship in Clinical MORE & REGISTER ACRM.org/ldc **Integrative Health Research** 

Ryan Bradley, ND, MPH, ACRM.org/s17

Falling in Love with the fter Spinal Cord Injury Ashraf S. Gorgey, PhD, MPT; Director of RESEARCHER'S JOURNEY Stacey Reynolds, PhD, OTR/L, FAOTA Monica A. Perez, PT, PhD; Scientific Chair, Dimitry Sayenko, Scientist, Associate Professo

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RADHA HOLAVANAHALLI, PhD; Project Officer, NIDILRR - ACL

Rehabilitation Research; Eunice Kennedy Shriver National Institute of Child Health and

PATRICIA A. DORN, PhD, Director, Rehabilitation Research & Development

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**Beyond the Performance Years:** 

Vomen in Rehabilitation Science Symposic

Patricia C. Heyn, PhD, FGA,

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ACRM.org/s7

Isha Vora, PhD, OT; Postde

ACRM.org/s10

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PECIAL SYMPOSIUM

There's a New Technology to

**Stroke.** Why Aren't You Using It?

Help Your Patients with Chronic

Jason Bailie, P

III ITARY BLAST EXPOSURE -

Rachel M. Proffitt, OTD,

A Critical Appraisal of the

**Retired Soccer Player** 

Coverage — WHO Rehabilitation 2030 Initiative"

ALARCOS CIEZA, MSc, MD, PhD;

Head of NCD Integrated Support & Sensory

unctions, Disability & Rehabilitation at the

Department of Noncommunicable Diseases

World Health Organization

(NCD), Rehabilitation & Disability;

FRI 1 NOV ACRM.org/funding

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Factors into the Plan of Care

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ontreal, Quebec, Canada

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Brain Health of Black Men

What Did Mr. Rogers Know About Brain Injury

Raj G. Kumar, PhD MPH; Assistan

ACRM.org/s5

The Impact of Caregiving on the

Patricia C. Heyn, PhD, FGA,

he Psychology of Recovery: How to

ACRM.org/s8

Robert W. Turner, II, MS, PhD;

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Brain Injury Program Manager, Courage Kenny Rehabilitation Institute

SPINAL CORD INJURY NEUROPLASTICITY TELEHEALTH

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course, the WORLD PASS

Stroke Onward

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MAYTE SUAREZ-FARINAS.

ARITZ IRIZAR, PhD;

of Medicine at Mount Sinai

The Voice of Parkinson's:

**Evidence for Singing as Medicine** 

STEGEMÖLLER,

owa State University

PhD; Professor, Icahn School

sistant Professor, Icahn School

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Cognition and Quality of Life

**Cognitive Effects of Cancer Treatments** 

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Arranging Pretty: Piecing Together Meaningful Clinical

LISA BOIVIN,

SPECIAL SYMPOSIUM

"Get up offa that thing & dance

'til you feel better!" **The Why &** 

**How** of **Encouraging Dance for** 

People with Parkinson's Disease

Dean for Physical Therapy.

**GAMMON EARHART** 

ACRM.org/s9

Simra Javaid, DO; Assistant Professor, UTHealth/

**Emily Klein**, PT, DPT; Pediatric Physical Therapist, TIRR Memorial Hermann

Bridging the Gap Between Capacity &

ance: Behavior Management

nents of Constraint-induced There

David M. Morris, PT. PhD. FAPT

Sarah M. dos Anjos, PhD; Assista

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of Medicine at Mount Sinai

**CLOSING SESSION 3 NOV** 

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**PLEASE NOTE:** This is a guide, not to time-scale, and is subject to change. w This infographic is preliminary and is for representational purposes only — not meant for schedule planning

Conference activities start as early as 7:00 AM and may run as late as 11:00 PM.

ww For the latest programming, times and details, please check the searchable online program ACRM.org/op and the app ACRM.org/app

ww Task Force meetings will occur during the scheduled Community Group meetings. See all meetings: ACRM.org/meetings24.

\*BI-ISIG = ACRM Brain Injury See all ACRM Community Groups: ACRM.org/communities. All registered attendees are welcome and encouraged to join all Community Group Meetings INTERDISCIPLIN

about ACRM



ACRM is truly interdisciplinary—uniting all members of rehabilitation teams from around the world. ACRM holds the LARGEST interdisciplinary rehabilitation research conference in the world every fall with nonstop content for chronic disabling conditions such as brain injury, spinal cord injury, stroke, neurodegenerative diseases, pain, cancer, neuroplasticity and more.

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Mark Hirsch, PhD, FACRM

NYU Grossman School of Medicine

Children's Hospital of Philadelphia

Todd Levy, MS, OTR/L, CBIST-AP

University of Alabama at Birmingham

Carolinas Rehabilitation

Sonya Kim, PhD

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= Ticketed event, separate registrations required. WORLD PASS

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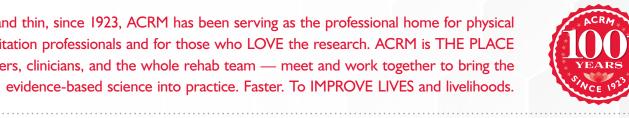
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