

THE NON HEALING WOUND IN THE HOSPITAL SETTING

HOW TO RECOGNIZE AND TREAT AN ATYPICAL WOUND

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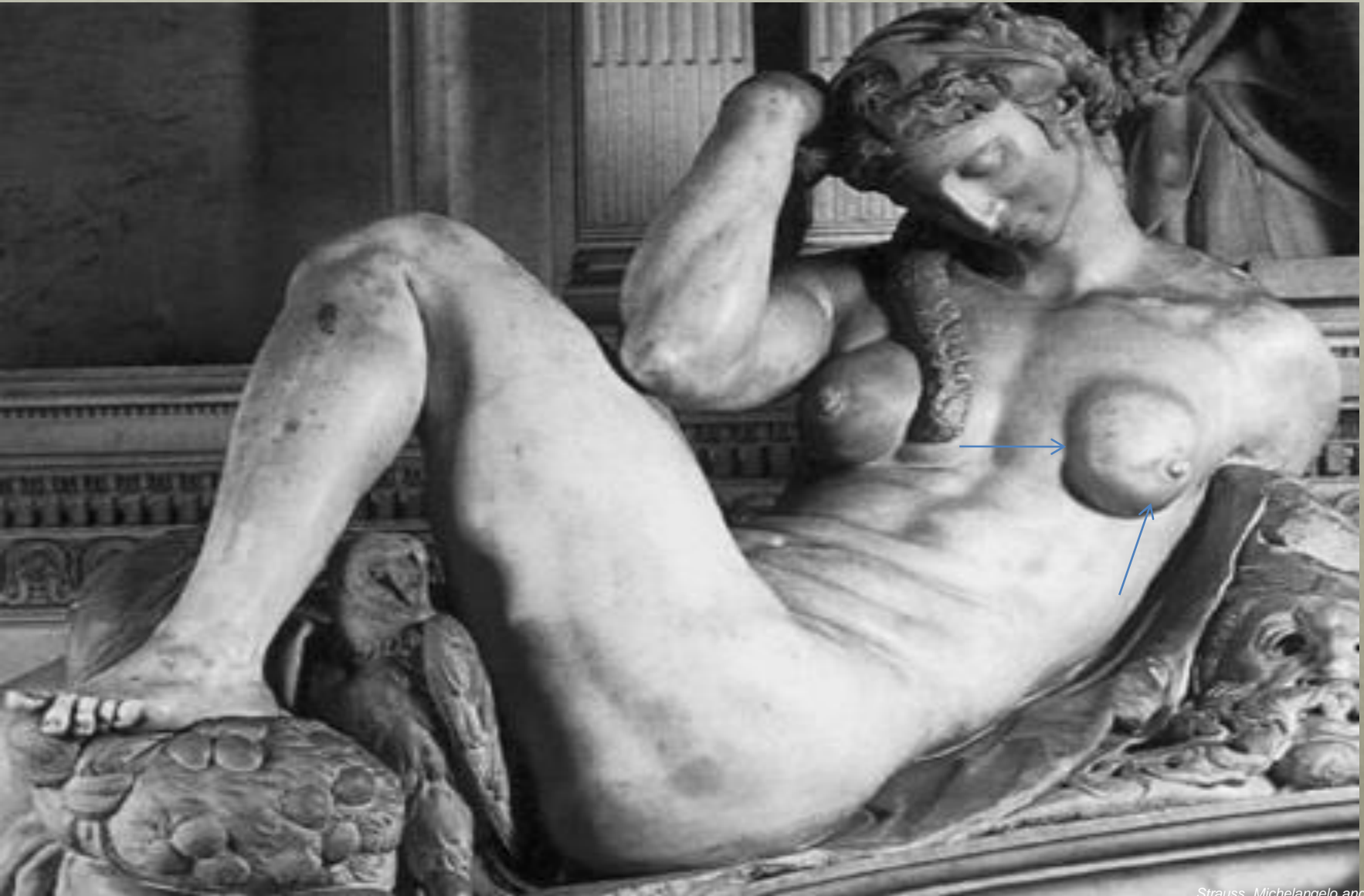
NO DISCLOSURES



I am From New
Jersey

This makes me
an Expert on
Open Wounds !

Notte, 1526-1536, Florence. *Michelangelo*



Unde Venis?

History

When.

Where

How

Who



. “My wife is beginning to find the task beyond her strength, and I am in pain from an abscess on my right leg This must be the price exacted by heaven for the great happiness of my marriage”

Honore de Balzac

History

- 1) What did the ulcer look like at first?
 - Leg ulcer often change in appearance due to application of medications
 - or superimposed infections. It is important to know about these changes
- 2) What started the ulcer?
 - Was there a local injury, exposure to hot or cold temperature, any
 - medications??
- 3) How quickly did the ulcer develop?
 - Rapidly developing ulcers suggest venous insufficiency, while more slow growth is consistent with arterial insufficiency
- 4) Past medical history and family history
 - Sickle cell disease?
 - IBS
 - DVT
- 5) Is the ulcer painful?
 - Stasis ulcers are usually painless whereas arterial ulcers are very painful
- 6) What are a list of medications including herbal medications the patient is taking?



STASIS ULCERATION Unde Venis?



AVOID LOOKING AT THE ROUTINE AS ROUTINE



Diagnostic acumen is not looking for what is there but more what is missing.

Causes of impaired wound healing

- Impaired perfusion
- Infection
- Repeated continuous trauma



Risk Factors for the development of barrier breakdown

- Vascular

- Arterial insufficiency
- Venous insufficiency

- Neurologic

- Sensory neuropathy
- Autonomic neuropathy

- Altered biomechanics of the foot

- Charcot foot
- Plantar bony prominences

- Infections

- Trauma

- Diabetes



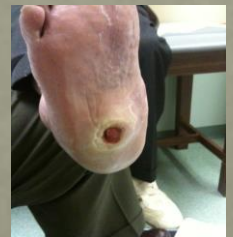
Physical Exam

- Location

- Venous ulceration: typically between lower 1/3 of calf to medial malleolus
- Arterial: Lateral malleolus, bony prominences and distal ulcerations are more typical
- Neuropathic: pressure points of feet like the heel

- Size

- The larger the size the less likely to heal



**“ A man is only as old
as his arteries”**

Pierre.J.Cabanis

PROGNOSIS IN ATHEROMATOUS EMBOLIZATION SYNDROME

- Depends on extent of organ system involvement
- In malignant, multiorgan system involvement, majority of patients die within 1 year
 - Patients undergoing catheterization
 - 58% Mortality Rate



Surgery 1983; 93:722-4



Is there PAD?

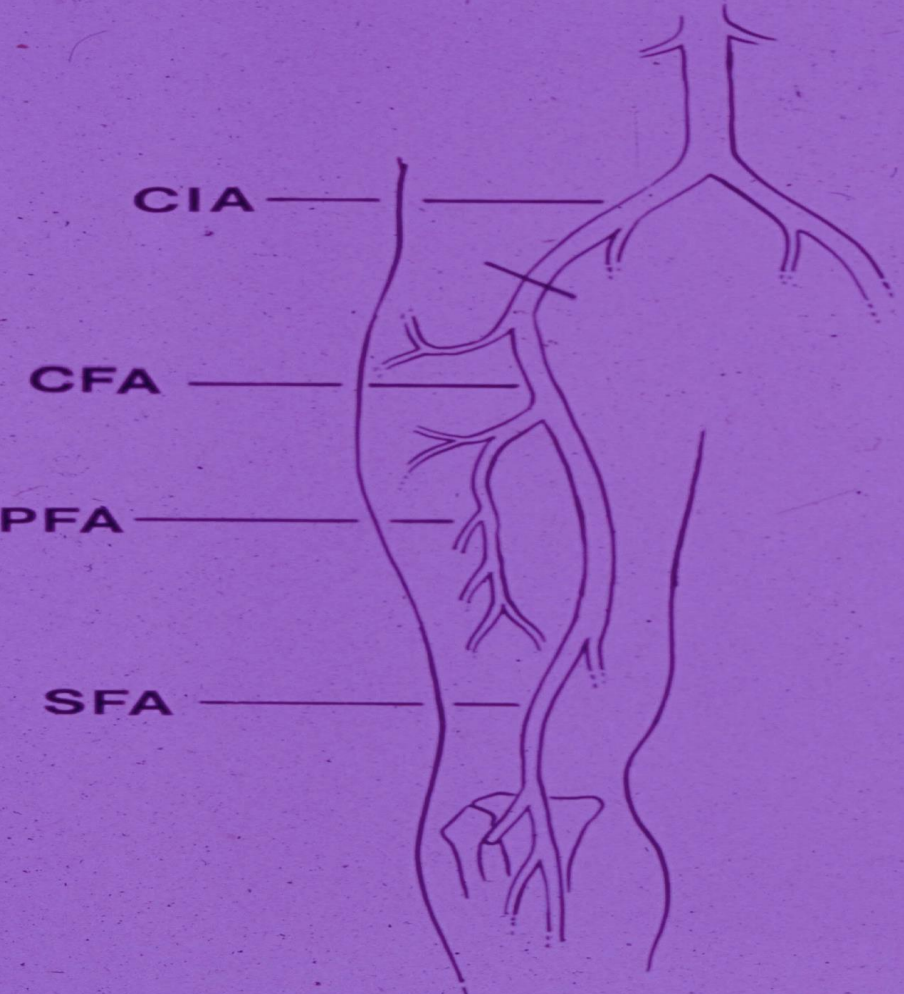
PAD



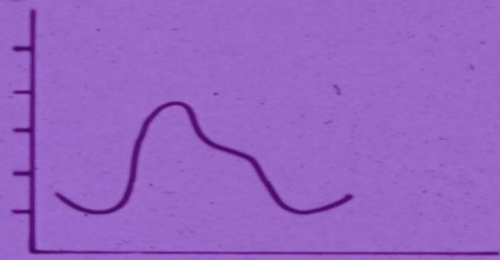
Diagnosis of PAD

- Vascular history
- Physical examination
 - Assess pulses
- Ankle-brachial index measurement
- Noninvasive vascular laboratory
- Arteriography

NORMAL ARTERIAL SUPPLY TO RIGHT LEG WITH SEGMENTAL LIMB PRESSURES (SLP) AND PULSE VOLUME RECORDINGS (PVR)



ARM BP
130mmHg

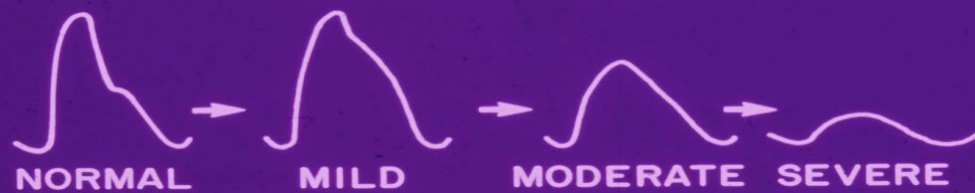


130mmHg



130mmHg

**PULSE VOLUME RECORDINGS
CHANGES WITH PROGRESSIVE ARTERIAL NARROWING**



PULSE VOLUME RECORDINGS





Chronic Critical Limb Ischemia: Historical Clues and Physical Findings

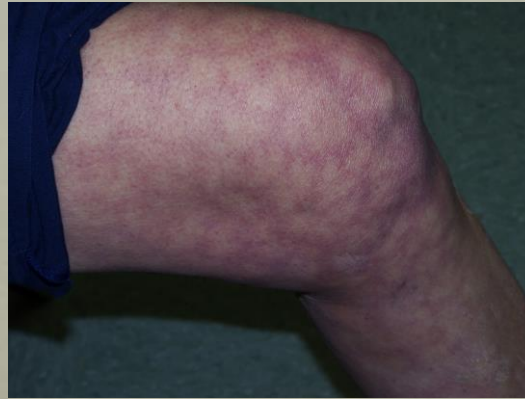
- Ischemic rest pain
 - Ache, pain, numbness of arch of foot/toes with leg elevation
 - Most uncomfortable at night while resting in bed
 - Interferes with sleep
 - Relief with dependent positioning of limb
- Ischemic ulceration
 - Found distally at ends of toes, over bony prominences on feet
 - Dry, devitalized, black
 - Intense pain
- Gangrene



Pain, sleep deprivation, lack of mobility, and need for intensive medical care all severely impair functional independence and quality of life

Social History??

- Drug use?
- Smoking history

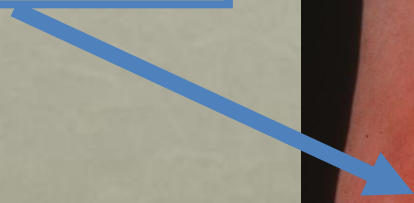


SEPTIC THROMBOPHLEBITIS



37 YO MALE WITH A PAINFUL ISCHEMIC ULCER ON THE RIGHT GREAT TOE

Important Clinical Clue



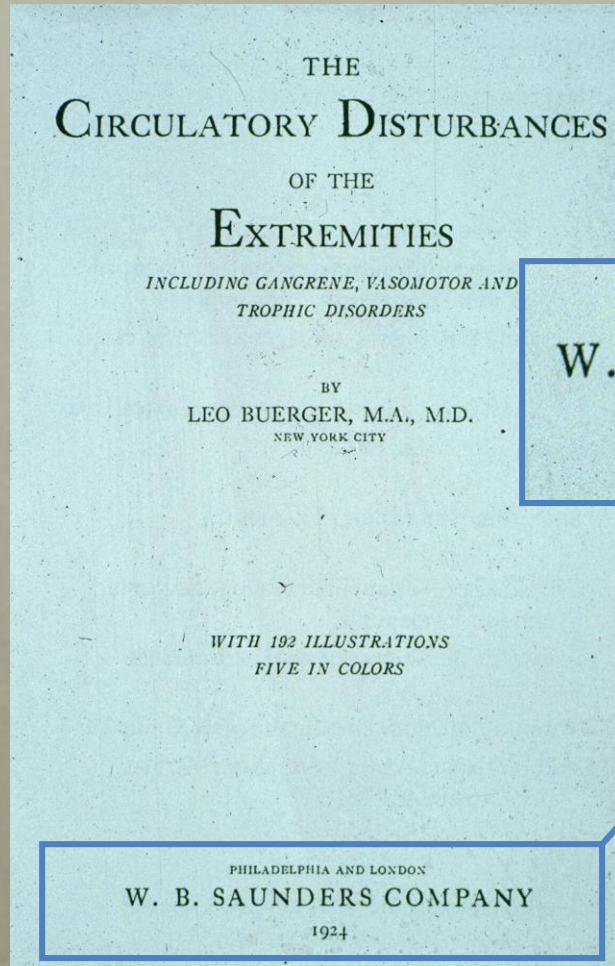
GANGRENOUS TOE



ISCHEMIC FINGER ULCER



BUERGER'S DISEASE



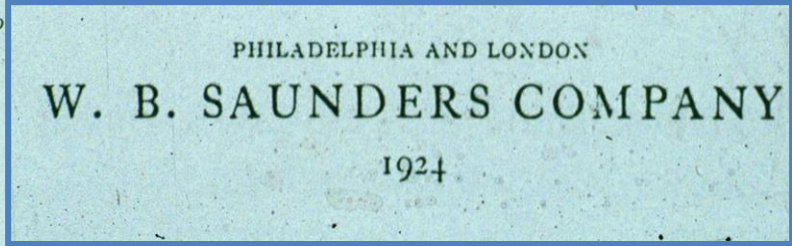
THE
CIRCULATORY DISTURBANCES
OF THE
EXTREMITIES

*INCLUDING GANGRENE, VASOMOTOR AND
TROPIC DISORDERS*

BY
LEO BUERGER, M.A., M.D.
NEW YORK CITY

*WITH 192 ILLUSTRATIONS
FIVE IN COLORS*

PHILADELPHIA AND LONDON
W. B. SAUNDERS COMPANY
1924



PHILADELPHIA AND LONDON
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THROMBOANGIITIS OBLITERANS (BUERGER'S DISEASE)

- Distal extremity ischemia in a patient who smokes cigarettes plus one or more of the following:
 - Typical pathological findings of TAO
 - Typical arteriographic findings plus no source of proximal emboli and no atherosclerosis
 - Absence of connective tissue diseases (i.e. scleroderma, SLE, RA, MCTD) or diabetes
 - Presence of superficial or deep thrombophlebitis

ETIOLOGY AND PATHOGENESIS

- Tobacco
- Genetics
- Immunological
- Hypercoagulability

TAO

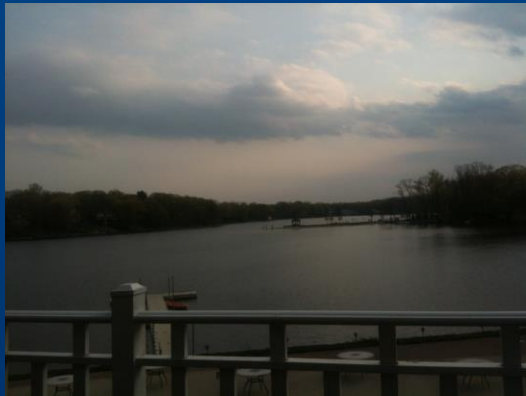


PERNIO (CHILBLAINS)

Itching

Burning

Throbbing Painful ulceration





Pernio



Pierre Auguste Renoir 1841-1919

“The pain passes, but the beauty remains.”



“One does not need hands in order to paint!”

Auguste Renoir



Ischemic ulceration in an unusual locations



RAYNAUD'S



SCLERODERMA



ERYTHROMELALGIA

MITCHELL'S DISEASE

- Familial form inherited Autosomal Dominant
- Heating of the affected extremities
- Alcohol or caffeine consumption
- Any pressure applied to the limbs.

Drugs

Ergot derivatives

Nifedipine

Verapamil



[Myeloproliferative disease](#)

[Hypercholesterolemia](#)

[Autoimmune disorder](#)

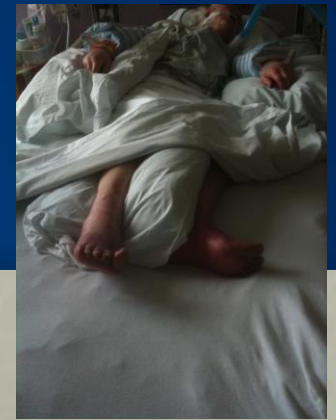
[Small fiber peripheral neuropathy](#)

[Fabry's disease](#)

[Mercury poisoning](#)

[Mushroom poisoning](#)

ERYTHROMELALGIA



Henry VIII

'Bluff King Hal'

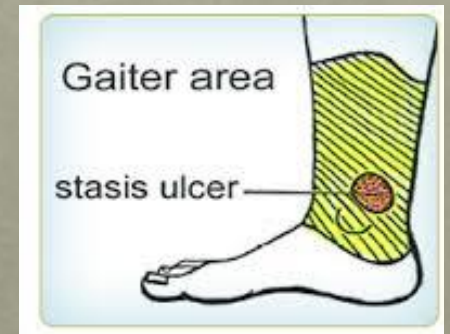


'sorre legge'



Venous Ulceration

“Stasis”



56 YR OLD HOMOSEXUAL SMOKER WITH
SUPERFICIAL PHLEBITIS , DIABETES AND A MIXED
ISCHEMIC AND STASIS ULCERATION WITH MRSA



Degloving injury



Squamous Cell Degenerative Carcinoma



Marjolin's
ulcer

Moribund foot



Lymphangiocarcinoma Carcinoma



BASAL CELL CANCER

- Small, circumscribed waxy area
 - Solid elevation of the skin
 - Enlarges peripherally
- Develops into a crater that erodes, crusts and bleeds



Pseudomonas



Flies and Open wounds



Fly Count



HEMI HYPERTROPHY VARICOSE VEINS AND PORT WINE SPOTS



PYODERMA GANGRENOSUM

- Immune Dysfunction of Neutrophils
- Inflammatory bowel Disease
 - Ulcerative colitis
 - Crohn's
 - RA
- Hairy cell Leukemia
- Myloid Metaplasia
 - Mylofibrosis
 - Wegener's
- Monoclonal Gammopathy



Ulcers Of the Diabetic

Diabetic Dermopathy

Neurotrophic Ulceration

Ischemic ulceration

NECROBIOSIS
LIPOIDICA
DIABETICORUM



Lymphedema North Americana



COMPRESSION THERAPY



SUDDEN PAINFUL SPRINGTIME ULCER







Spider Bite



Tarantula bite



- G-d Protects idiots and children





“There is no vice so simple but shows some mark of virtue on its outward parts”



- **The Merchant Of Venice**
William Shakespeare





Cutaneous Anthrax

Anthrax is an acute disease caused by the bacterium *Bacillus anthracis*.



- Anthrax commonly infects wild and domesticated herbivorous mammals that ingest or inhale the spores while grazing
- Black painless Eschar with a bread mold appearance





Cutaneous Anthrax



Infectious etiologies

Streptococcus pyogenes
Erysipelas
Fasciitis necroticans (Streptococcus haemolyticus),
Ulceration pyoderma (S. aureus)
Gas gangrene (Clostridium)
Ecthyma gangrenosum (Pseudomonas),
Septic embolism
Anthrax (Bacillus anthracis).
Diphtheria (Corynebacterium diphtheriae)
Osteomyelitis
Toe-web fungal infection
Lues maligna (lues III, gummata)
Buruli ulcer (Mycobacterium ulcerans)
Tularaemia (Franciscella tularensis)
Leishmaniasis
Tropical ulcer (Bacteroides, Borrelia vincenti and
other bacteria)
Amoebiasis Histoplasmosis Bacillary angiomatosis

ARCHETYPES AND VOODOO



Voodoo Ceremonial Cave





100 YEAR OLD CAVE DRAWINGS







100 year old Cave Drawing



52 year old with h/o
temporal wasting
neurotrophic ulcer
lymphedema right a
swollen
right arm

Burns with Secondary Lymphedema



Neurotrophic Ulceration



STEMMER SIGN



ARCHETYPES & VOODOO

HOW CAN WE REALLY LOOK AT THIS AND SAY IT IS CRAZIER THAN THE DAILY NEWS CYCLE ?



THANK YOU

















FROSTBITE

- Temperature (minor)
- Duration (major)
- Humidity
- Wind-chill
- Wet skin

FROST-BITE HOST FACTORS

- Lack of proper clothing
- ETOH
- Drug Intoxication
- Malnutrition
- 80% of cold related morbidity have mixed psychiatric/ETOH abuse associations

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FROSTBITE

HOST FACTOR PATHOPHYSIOLOGY

- Vasodilatation of pores
- Intrinsic heat loss
- Hypotension
- Hypothermia
- Compensatory vasoconstriction
- Reduced flow to peripheral tissues
- Increased tissue destruction

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FROSTBITE (CO MORBIDITIES)

- ASO
- Hypovolemia
- Hypothyroidism
- Diabetes
- Infection
- Water-related cold sports

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