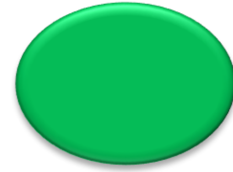
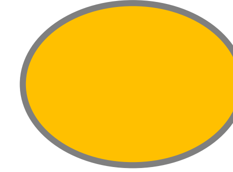
بسم الله الرحمن الرحيم

In The Name Of Allah, The Most Beneficent, The Most Merciful

WELLCOME to 4th year

of medical research and innovation

Dr. Mustafa Qamar

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Clinical Decision Making and Differential Diagnosis

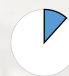
opportunities
MAKING
Wrong
Society
Right
Timing
Logic
Happiness
Success
Maturity
learning
Fear
Decision
Anger
Delay
Regret
Incentive
Committment
Empowerment
Experience
Price
management
Emotions
Power
Responsibility
Luck
Excitement
Risk
Past
Learning
Rethinking
Knowledge
Failure
De-cision

Introduction to Screening for Referral in Physical Therapy

Dr Mustafa Qamar
Assistant Professor, SMC

Medical Screening

- Reasons to Screen
- Screenings and Surveillance
- Diagnosis by the Physical Therapist
- Differential Diagnosis Versus Screening
- Direct Access/Autonomous Practice



SCREENING PROGRAM

- Comprehensive disease control activity based on the identification and treatment of persons with either un-recognized disease or unrecognized risk factors for disease.

or

is a strategy used to identify an unrecognized disease in individuals without signs or symptoms.

- screening tests are somewhat unique in that they are performed on persons apparently in good health.

- **Screening test** specific technology (survey questionnaire, physical observation or measurement, laboratory test, radiological procedure, etc.) used to help identify persons with unrecognized disease or unrecognized risk factors for disease.

COMMON SCREENING PROGRAMME

In many countries there are population-based screening programme.

- Common screening programme include:
- Cancer screening
  - Mammography to detect breast cancer
- PPD test to screen for exposure to tuberculosis
- Alpha-fetoprotein, blood tests and ultrasound scans for pregnant women to detect fetal abnormalities
- Ophthalmoscopy or digital photography for diabetic retinopathy

- Ultrasound scan for abdominal aortic aneurysm

- Direct access: Therapist has primary responsibility or first contact.
- Quicker and sicker.
- Signed prescription: Clients may obtain a signed prescription for physical/occupational therapy based on similar past complaints of musculoskeletal symptoms without direct physician contact.
- Medical specialization: Medical specialists may fail to recognize underlying systemic disease.

- Disease progression: Early signs and symptoms are difficult to recognize, or symptoms may not be present at the time of medical examination.
- Patient/client disclosure: Client discloses information previously unknown or undisclosed to the physician.
- Client does not report symptoms or concerns to the physician because of forgetfulness, fear, or embarrassment. * Presence of one or more yellow (caution) or red (warning) flags

Levels of DISEASE PREVENTION

World Health Organization

money
job
education
access to
health services
complex interaction
determinants of
health
individual
how?
why?
vision
safe
well maintained
accident
clinician
immediate issue
knowledge
attitudes
ROAD RULES
individual
lifestyles and behaviour
physical, social and
economic environment
safe roads
alcohol
drugs
social determinants
of health
support
community
attitudes
enforcement
LAWS
legislation

Levels of DISEASE PREVENTION

Primordial prevention:

Inhabit factors known to increase disease

e.g,

Avoid Smoking

Primary Prevention:

Approaches and interventions to avert the occurrence of diseases or injuries

e.g,

Immunization

Secondary Prevention: Early detection, diagnosis and treatment of disease, illness, and other pathologic health conditions

e.g,

Diabetes mellitus

Tertiary Prevention: Providing ways to limit the degree of disability while improving function in patients/clients with chronic and/or irreversible diseases

e.g,

Stroke rehabilitation

Quantary Prevention:

- Group of actions and measures to decrease and alleviate possible harm or adverse effects caused by health interventions and treatment

E,g.

- Reducing misdiagnosis and medical errors

Screening aims to detect those at risk of a specific medical condition who are likely to benefit from further investigations and possibly treatment to prevent the disorder or condition or its consequences

Occupational health **Surveillance** is the on going systematic collection, analysis, interpretation and dissemination of data for the purpose of prevention

DIFFERENTIAL DIAGNOSIS

- The **Distinguishing** of a disease or medical condition from others presenting with similar signs and symptoms

Differential diagnostic procedures are used by medical professionals to diagnose the specific disease in a patient, or, at least, to eliminate any life-threatening Conditions

- Gather all information about the patient and create a symptoms list.
- Make a list of all possible causes (also termed "candidate conditions") of the symptoms.
- Prioritize the list by placing the most urgently dangerous possible cause of the symptoms at the top.
- Treat the possible causes beginning with the most urgently dangerous condition and working his way down the list. "Rule out" practically means to use tests and other scientific methods to render a condition of clinically negligible probability of being the cause.

Neck Pain

Shoulder Pain

Fever/cramps

Muscle Soreness

Limited mobility

ADL effected

If

You

Encounter

Any

Medical emergency condition??????????

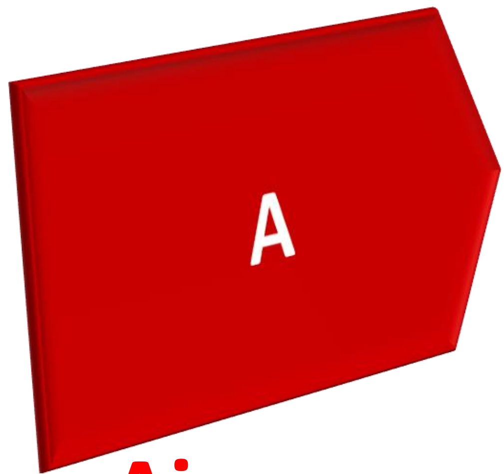
Survey The Scene, then: RAP

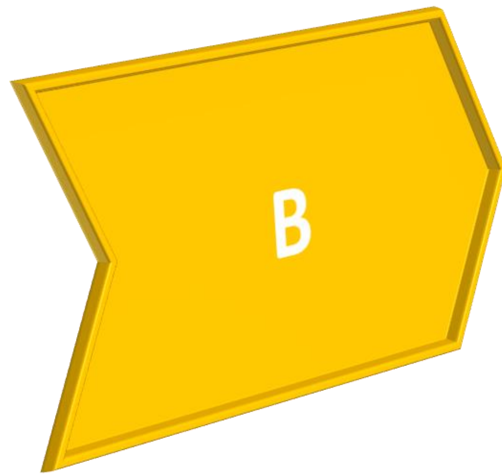
- R - Responsiveness
  - Tap shoulder and shout "Are you ok?"

- A - Activate EMS (if unresponsive)

Call 1122

- P - Position on back
  - All body parts rolled over at the same time
    - Always be aware of head and spinal cord injuries
    - Support neck and spinal column





Airway

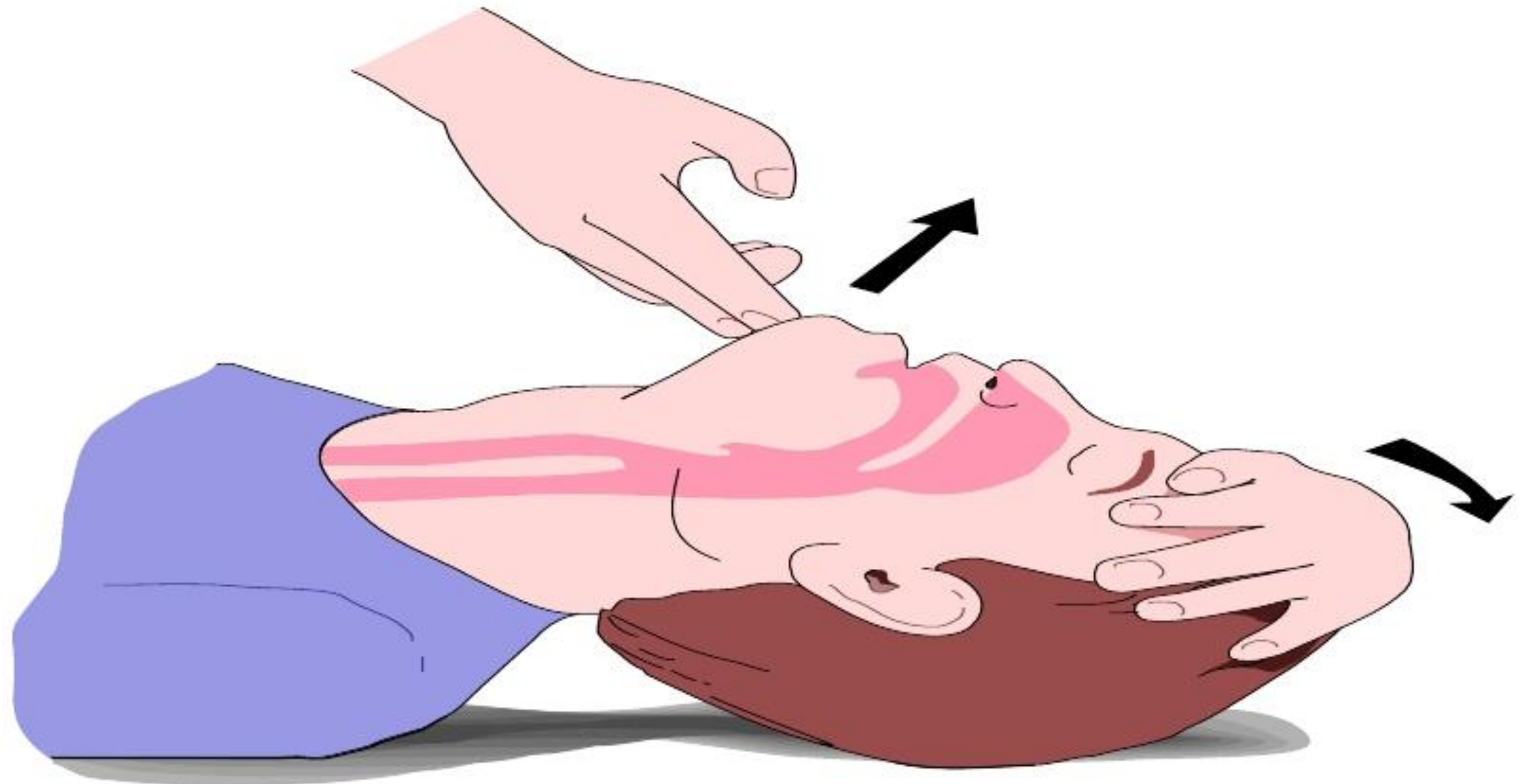
Breathing

Circulation
- Bleeding

Disability

Checking Vital Signs

- A – Airway
  - Open the airway
  - Head tilt chin lift

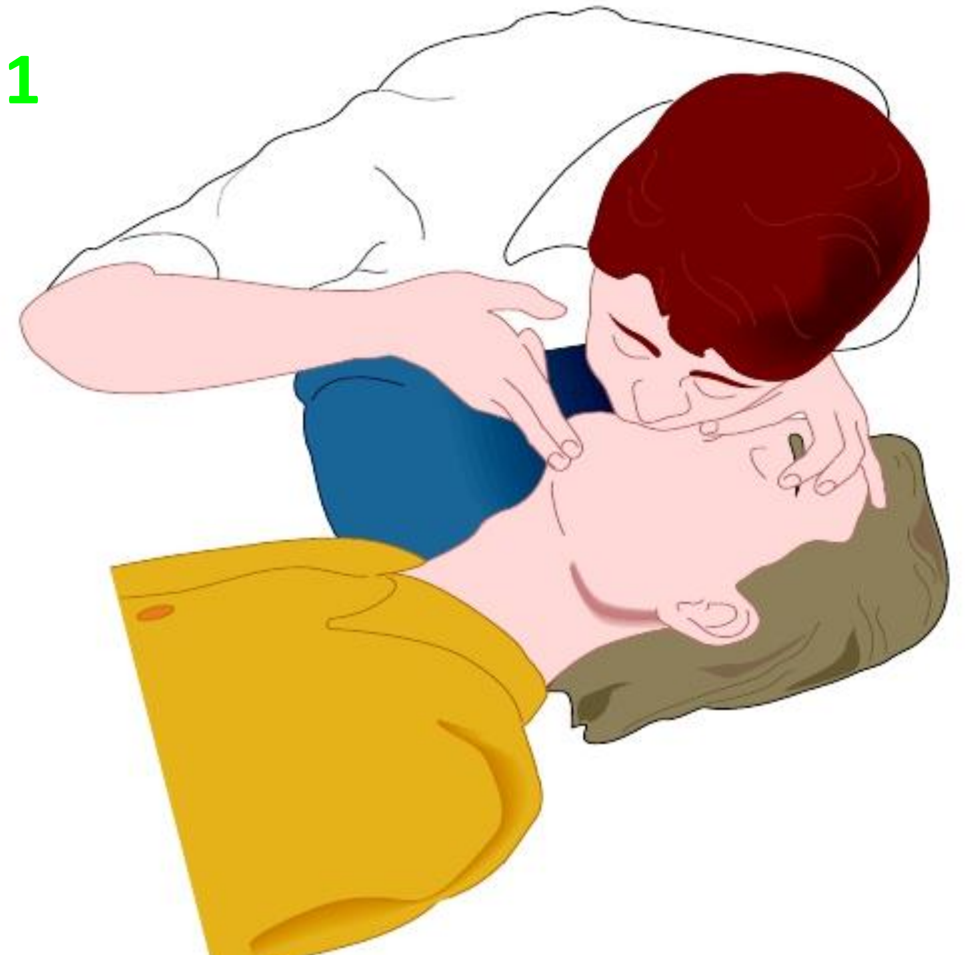


B – Check For Breathing

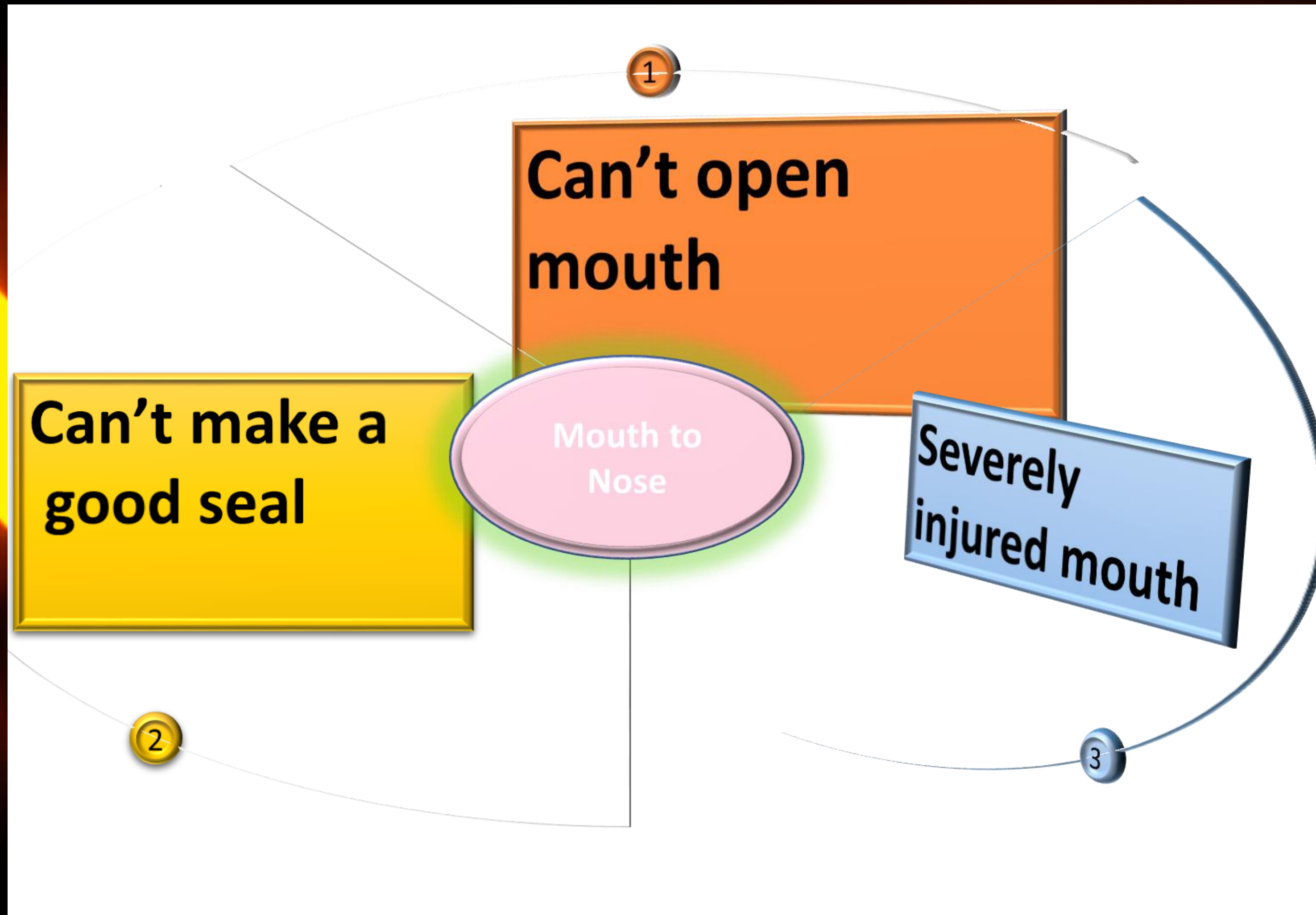
- Look, listen and feel for breathing
  - No longer than 10 seconds

BREATHING

- If the victim is not breathing, give two breaths (1 second or longer)
  - *Pinch the nose*
  - *Seal the mouth with yours mouth*
- If the first two don’t go in, re-tilt and give two more breaths

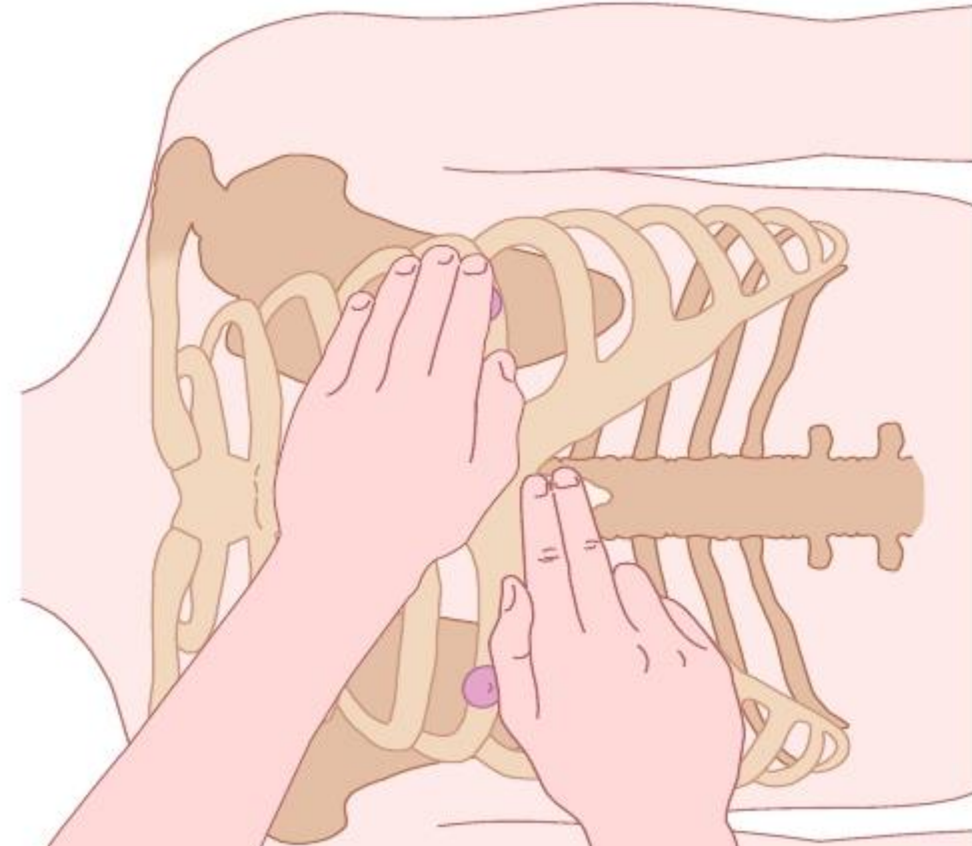


Breathing: Mouth To Nose (when to use)



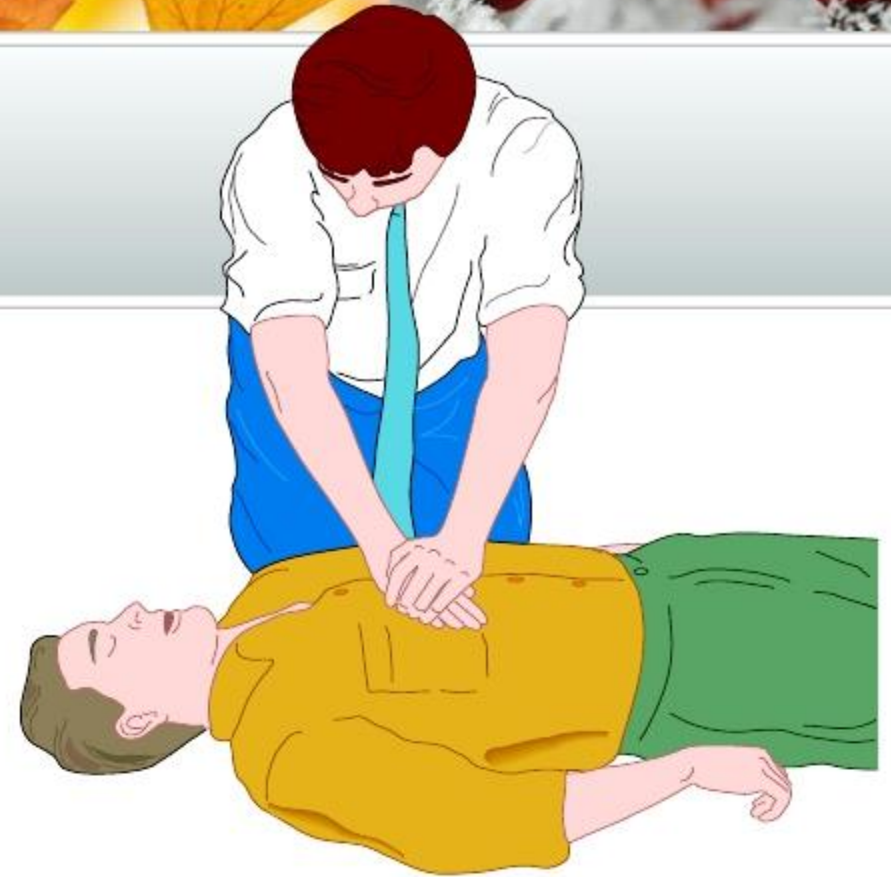
Compressions

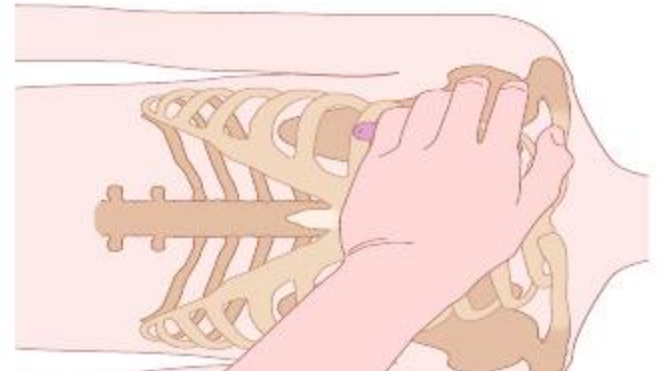
- After giving breaths…
- Locate proper hand position for chest compressions
- Place heel of one hand on center of chest



COMPRESSIONS

- Using both hands, give 30 chest compressions
  - Count 1, 2, 3 …
- Depth of compressions: 1 .5 to 2 inches
- For children: ½ to 1/3 of chest depth and use 1 or 2 hands

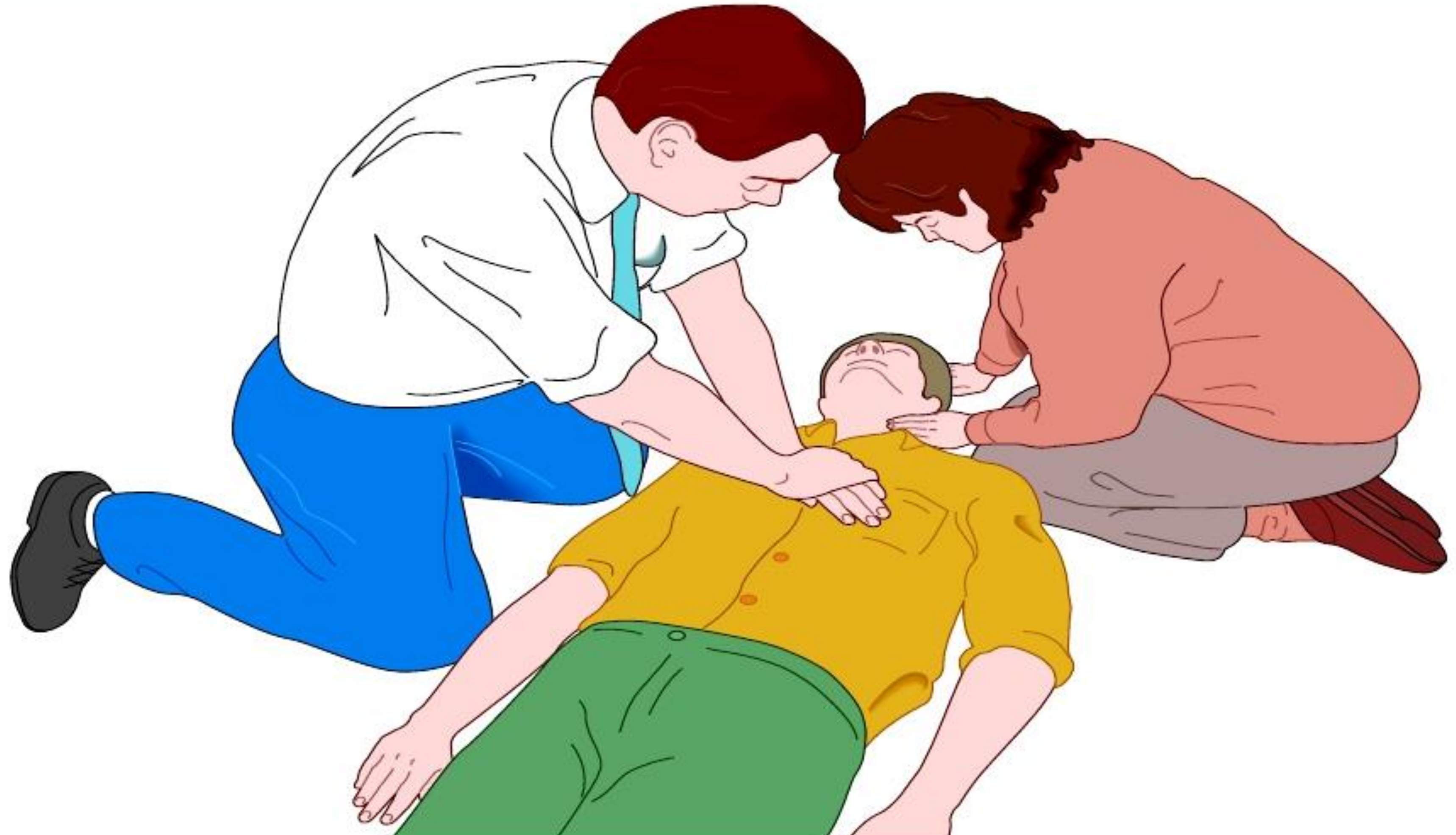




- After 30 chest compressions give:
- 2 slow breaths
- Continue until help arrives or victim recovers
- If the victim starts moving: check breathing

Two Partner CPR

- Rescuer 1:
  - RAPAB
- Rescuer 2:
  - place hands for compressions
- Compression rate: 30:2
- Switch off when tired



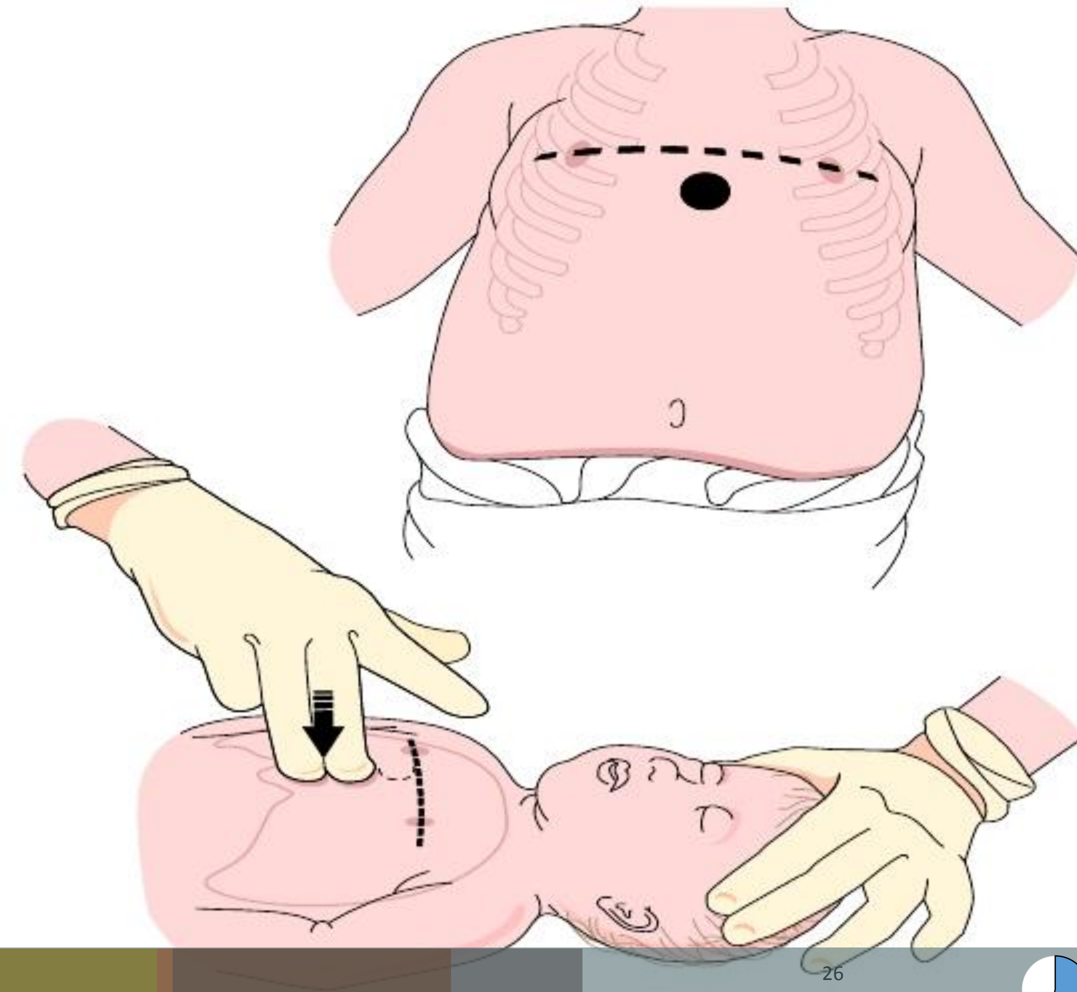
CPR for Infants (Under 1 Year of Age)

- Same procedures (RAPAB) except:
- Seal nose and mouth or nose only
- Give shallow “puffs”
-

CPR: INFANTS

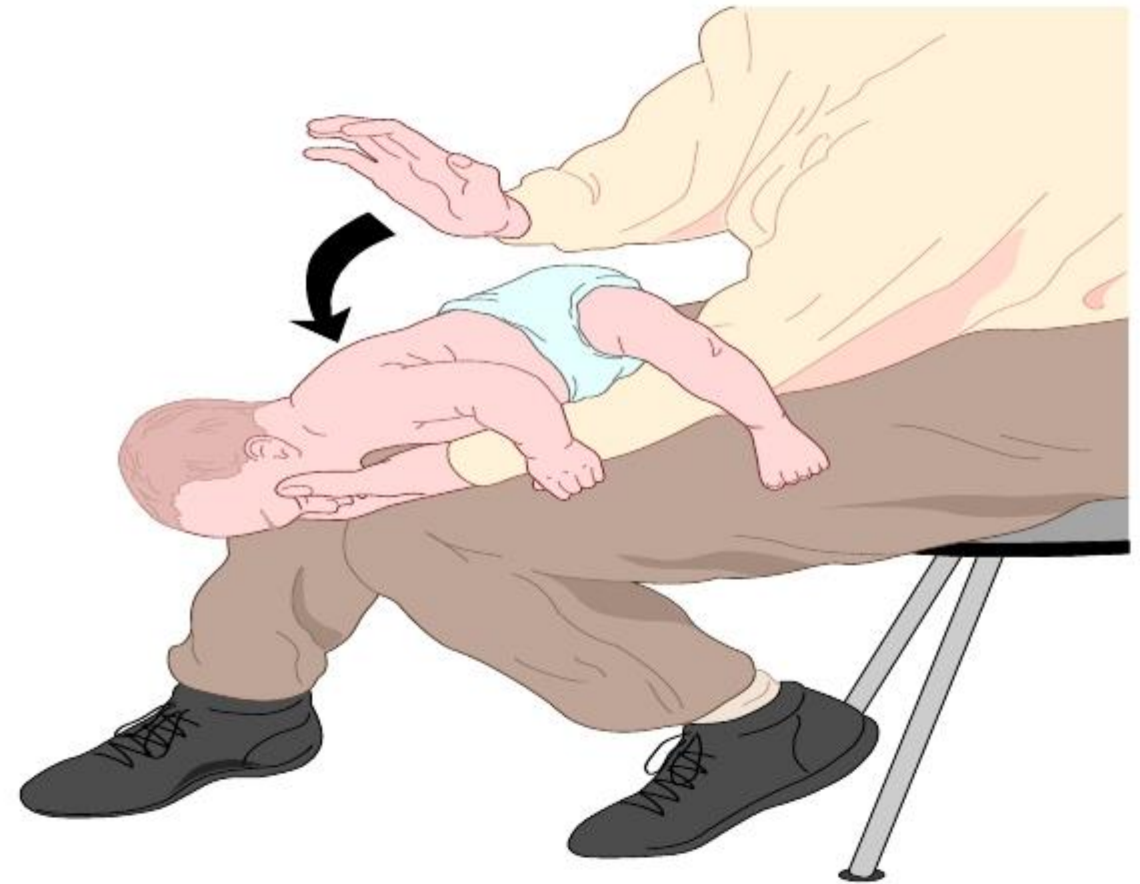
RAPAB

- **Give CPR**
  - **Press sternum 1/2 to 1/3 depth of the chest**
  - **Use middle and ring finger**
- **30 compressions to 2**
- **If alone, resuscitate for 2 minutes then call 1122**



Choking: Conscious Infants

- Position with head downward
- 5 back blows (check for expelled object)
- 5 chest thrusts (check for expelled object)
- Repeat



When Can I Stop CPR?

- Machine differential diagnosis is the use of computer software (application of artificial intelligence) to partially or fully make a differential diagnosis.

- Many studies demonstrate improvement of quality of care and reduction of medical errors by using such decision support systems.

- However, these tools all still require advanced medical skills in order to rate the symptoms and choose additional tests to deduce the probabilities of different diagnoses.

Ensure that all possible pathological processes are considered , so

REMEMBER

I VINDICATE AIDS

THE PURPOSE OF THE DIAGNOSIS

- Treat as specifically as possible by determining the most appropriate intervention strategy for each patient/client
- Recognize the need for a medical referral

- Physical therapists shall establish a diagnosis for each patient/client.

- The diagnostic process requires evaluation of information obtained from the patient/client examination, including the history, systems review, administration of tests, and interpretation of data.

Elements of patient/client management

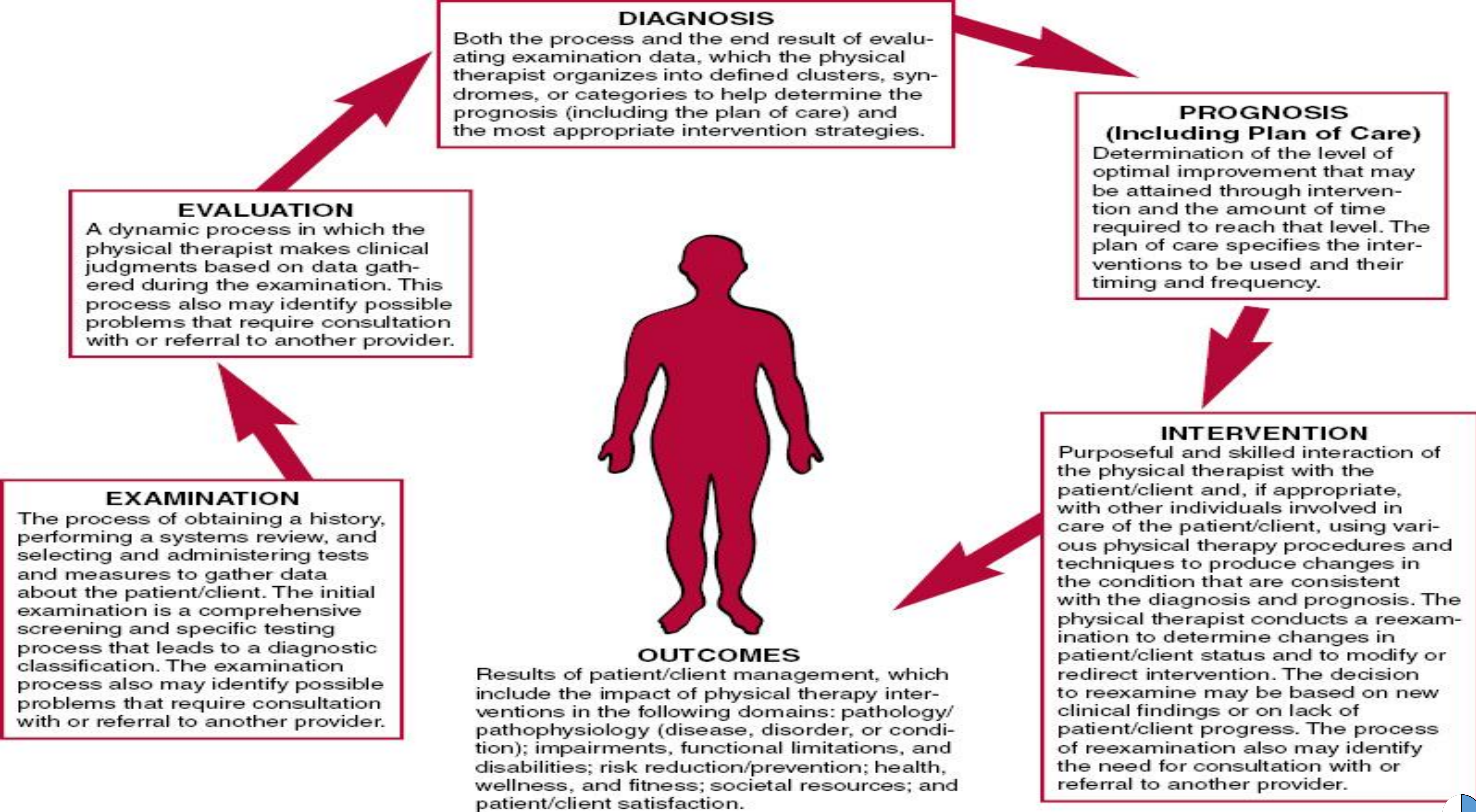
Examination

Evaluation

Diagnosis

Prognosis

Intervention



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Identification

- ❑ identifying data
  - name, age, occupation, hobbies, hand dominance
- ❑ chief complaint
- ❑ past orthopedic history
  - injuries, past non-surgical treatment, past surgery
- ❑ other medical history
  - past surgery, allergies, medications, medical illnesses

History of Present Illness

- ❑ important to obtain details regarding onset and progression of symptoms
- ❑ pain, weakness, deformity, stiffness, crepitus
  - OPQRST (Onset, Provoking / Alleviating factors, Quality, Radiation, Site, Timing)
  - muscular, bony, or joint pain ?
  - number of joints involved and symmetry of involvement
- ❑ inflammatory symptoms
  - morning stiffness (> 30 min), tenderness, swelling, redness, warmth
- ❑ mechanical/degenerative symptoms
  - worse at end of day, better with rest / worse with use
  - locking, giving way, instability

- neoplastic and infectious symptoms
  - pain which is constant, occurs at night
  - fever, night sweats
  - anorexia, fatigue, weakness, weight loss
  - **P.T. B**ilal **L**oves **K**ids: history of **P**rostate, **T**hyroid, **B**reast, **L**ung or **K**idney cancer (most common mets to bone)
- activities of daily living
  - getting up, sitting down, using bathroom, combing hair, transferring
- referred symptoms
  - shoulder pain from the heart or diaphragm
  - arm pain from the neck
  - cardiac, pulmonary, GI history as needed
  - leg pain from back
  - back pain from the kidney, aortic aneurysm, duodenal ulcer

Look, Feel, Move

- always examine the joint above and below
- look - skin, shape, position
  - **SEADS: S**welling, **E**rythema, **A**trophy, **D**eformity, **S**kin changes
- feel - palpate soft tissue, bony, or articular abnormalities
  - tenderness, palpable deformity, effusion, temperature
- move the affected joint(s)
  - active and passive ROM, crepitus, abnormal mobility
  - passive ROM > active ROM suggests soft tissue inflammation or muscle weakness
- neurovascular tests
  - pulse, reflexes, power, sensation
- power: use MRC scale
  - 0=no movement
  - 1=twitch
  - 2=movement with gravity eliminated
  - 3=movement vs gravity
  - 4=movement vs some resistance
  - 5=movement vs full resistance

- special tests depend on joint
    - e.g. Lachman, McMurray for the knee
- observe gait
    - walking, heel-to-toe, on heels, on toes
    - Trendelenburg gait in hip disorders
    - antalgic, high stepping, circumduction

INVESTIGATIONS

Diagnostic Imaging

- plain or contrast radiographs (sinography)
- CT/myelography, MRI, EMG / NCS
- ^{99}Tc (Technetium) bone scan
  - reflects osteoblastic activity or inflammatory reaction
  - positive with fractures, tumours
- gallium scan
  - positive when uptake on gallium is greater than on ^{99}Tc
  - reflects hypervascularity, taken up by leukocytes
  - positive with infection

Blood Tests for Painful, Swollen Joint

- CBC, Rheumatoid Factor, ANA, ESR, C-reactive protein
  - use tests as warranted by history and physical

Other Tests

- synovial fluid analysis
  - 3 C's: Crystals, Cytology, Cultures

- A diagnosis by the physical therapist describes the patient/client's primary dysfunction.
- The diagnostic process has three steps
  - Examination
  - Evaluation
  - Diagnosis.
- During examination, the presence of yellow or red flags alerts the therapist to the need for a screening examination the therapist may conduct a screening examination. Throughout the evaluation process, the therapist must ask himself or herself

- Is this an appropriate for physical therapy?

- Is there a history or cluster of signs and/or symptoms that raises a yellow (cautionary) or red (warning) flag?

  - A yellow flag is a warning symptom that signals " slow down" and Think about the need for screening.

❖ A red-flag symptom requires immediate attention , either to pursue further screening or t o make an appropriate referral .

- Sometimes in the early presentation, there are no red flags or associated signs and symptoms to suggest an underlying systemic or viscerogenic cause of the client's NMS symptoms or movement dysfunction.

DIFFERENTIAL DIAGNOSIS VERSUS SCREENING

- The client reports skin lesions, gastrointestinal problems associated with back pain, digital clubbing, palmer erythema, shoulder pain with stair climbing, or any of the many indicators of systemic disease.
- If the patient/client does not progress in physical therapy or presents with new onset of symptoms unreported before, the screening process may have to be repeated.

Differential Diagnosis Versus Screening

- In some cases, exercise stresses the client's physiology and Previously unnoticed, unrecognized, or silent symptoms suddenly present more clearly.
- The process of reexamination may identify the need for consultation with or referral to another health care provider

- Direct access is the right of the public to obtain examination, evaluation, and intervention from a licensed physical therapist without previous examination by, or referral from, a physician.
- Before 1957 a physician referral was necessary in all 50 states for a client to be treated by a physical therapist.
- Until direct access, the only therapists performing medical screening were the military PTs.
- Direct access to PTs was first obtained in Nebraska in 1957

AUTONOMOUS PRACTICE

- **Autonomous** is defined as "self-governing;" "not controlled by others.“

or

- **Autonomous practice** is defined as independent, self-determining professional judgment and action

ATTRIBUTES OF AUTONOMOUS PRACTICE

- **Direct and unrestricted access:**
  - The physical therapist has the professional capacity and ability to provide to all individuals the physical therapy services they choose without legal, regulatory, or payer restrictions
- **Professional ability to refer to other health care providers:**
  - The physical therapist has the professional capability and ability to refer to others in the health care system for identified or possible medical needs beyond the scope of physical therapist practice

ATTRIBUTES OF AUTONOMOUS PRACTICE

- **Professional ability to refer to other professionals:**
- The physical therapist has the professional capability and ability to refer to other professionals for identified or patient/client needs beyond the scope of physical therapy services
- **Professional ability to refer for diagnostic tests:**
- The physical therapist has the professional capability and ability to refer for diagnostic tests that would clarify the patient/client situation and enhance the provision of physical therapy services

Thank You