

통증 물리치료학 및 실습

CH 2. 임상 의사결정

- SOAP note 작성, 진단 및 평가 -

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1. Introduction to SOAP note
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Introduction to SOAP Notes

SOAP note

- 정의
 - An acronym for **Subjective**, **Objective**, **Assessment**, and **Plan**)
 - A method of documentation employed by health care providers to write out notes in a patient's chart.
- 구성 (components)
 - **(Problem)**, **Subjective**, **Objective**, **Assessment**, and **Plan**
 - The length and focus of each component of a SOAP note vary depending on the specialty.
 - Briefness : Surgical SOAP > Medical SOAP

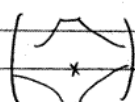
Admission note

- 경과기록 = 입원기록 (주의: SOAP note 와 다름)
- 입원 시 환자자신 또는 환자가족 등으로부터 진료에 필요한 정보를 수집하여 기록하는 것. 의사 및 간호사가 환자의 입원 상태 및 경과를 기록함. 양식은 시설마다 다름.
- Contents
 1. General
 - ✓ Generalized weakness / Fatigue / Fever / Chill (한기) / Weight change
 2. Skin
 - ✓ Rash (발진, 뾰루지) / Pigmentation (색소침착) / Urticaria (두드러기) / Itching
 3. HEENT
 - ✓ Headache / Visual disturbance / Otagia (귀통증) / Otorrhea (귓소고름) / Tinnitus (이명) / Nasal obstruction / Rhinorrhea (비루, 코점액과다분비) / Sore throat (인후염) / swallowing difficulty
 4. Respiration
 - ✓ Cough (기침) / Sputum (가래) / Pleuritic pain (늑막성 흉통)
 5. Cardiac
 - ✓ Chest pain / Orthopnea (직립 이외의 자세 호흡곤란) / Palpation
 6. Abdominal
 - ✓ Abdominal pain / Melena (하혈) / bowel habit change
 7. Renal/Urinary
 - ✓ Dysuria / Incontinence (요실금) / Frequency / Urgency / Nocturia (야뇨증)
 8. Musculoskeletal
 - ✓ Pain / Swelling / Tenderness / Back pain / Hot sensation
 9. Nervous
 - ✓ Dizziness / Syncope (실신) / Seizure

Admission note

등록번호: 598128
 성명: 김민준
 주민등록: 성별/나이: M/M
 진료과: GA 병실: 802

진료경과기록지

날짜	진료경과기록	서명
09. 11. 8	<Admission note>	
	Chief complaint.	
	RLQ abdominal pain.	
	onset) 15일 전 (appendectomy 후 1주일)	
	Present illness.	
	10월 23일 appendectomy 시행 후 1주일 전 RLQ abdominal pain 및 설사 증세 발생.	
	Past history.	
	OP history ; Rt leg fcl OP history (10년 전)	
	HTN / DM / Pul. Thc / hepatitis (-/-/-/-)	
	Review of system.	
	Epigastric pain (-) Nausea / vomiting (-/-)	
	Dyspepsia (-) Constipation / diarrhea (-/-)	
	Weight loss (-) URI symptom (-)	
	Physical examination	
	 Fever / chills (-/-)	
	Flat / distended (+/-)	
	Soft / rigid (+/-)	
	Tenderness (+)	
	Rebound tenderness (-)	
	Palpable mass (-)	
	Impression.	
	perihepatic abscess.	
	Plan.	
	diagnostic laparoscopy.	
	Irrigation & drainage.	PK 김민준



SOAP 준수사항

- ① 정확성 (Accuracy)
- ② 명확 및 명료성 (Clarity)
- ③ 간결성 (Brevity)

예시 1

Long and Windy

- Once the patient wheeled up to the / / bars and positioned himself in front of the / / bars. He locked his w/c, raised the foot plates and scooted forward from the seat of the chair. He then gripped the / / bars with his hands and on the count of 3 was able to pull himself up to a standing position without any assist. from the therapist. Once standing he was able to ambulate by positioning his arms forward and then taking steps. He could lead with either right or left foot. Upon turning in the / / bars he was unable to let go with one arm to pivot his body around. Therapist had to give some support until the patient was turned around and both arms were back on the / / bars.

예시 1

Brief

- Pt. ambulated 10 feet in // bars independently but required minimal assist of 1 to turn around in // bars. Site-stand from w/c independent utilizing // bars.

예시 2

- *Incorrect*

- Pt. stated she lived alone. Describes 5 steps without hand-railing at entry of her 1-story house. Denied previous use of assistive device.

- *Correct*

- States lives alone. Describes 5 steps without hand-railing at entry of her 1 story house. Denies previous use of assistive device.

예시 3

- **ROM is ↑**
- **Ⓜ shoulder flexion AROM is ↑ to 0-70°**
- **Feeling better**
- **Pt. states she knows she is feeling better indicated by her ability to perform light housekeeping tasks for ~2 hrs before tiring**

구두법 (Punctuation)

- **Hyphen (-)**
 - 범위를 나타냄.
 - Ex) AROM: 0-48°
- **Semicolon (;)**
 - 관련된 (독립된) 두 문장을 서로 연결함.
- **Colon (:))**
 - ‘Is’를 의미함 = 두 문장이 동일함을 의미함.
- **Comma (,)**
 - Use a comma to separate the elements in a series (three or more things), including the last two. "He hit the ball, dropped the bat, and ran to first base."

구두법의 예

- MAS: Modified Ashworth Scale (Graded from 0 – 4), FIM: Functional Independence Measure, VAS: Visual Analogue Scale.

Medical Terminology

(의학 용어)

Objectives

- The student will be able to analyze medical terminology to determine the meaning of medical terms describing patients' conditions, symptoms, diagnostic tests and surgical procedures
- The student will be able to understand commonly used medical abbreviations
- The student will be able to list certain abbreviations which are to be avoided.

Medical Terms You Probably Know

- Appendectomy (맹장꼬리 절제술)
- Tonsillitis (편도염)
- Inflammation (염증)
- Umbilical (탯줄, 제대)

Categories of Medical Terms

1. **Descriptive:** describes the shape, color, size, function

- Example: Erythrocyte
 - (Erythr means red, cyte means cell)

2. **Eponyms** (시조): terms named after a **person** (usually the first person to discovered or described a disease or organ)

- Example: Eustachian tubes are named after Bartolommeo Eustachii; Alzheimer's disease is named after Alois Alzheimer, MD.

Categories of Medical Terms

3. **Acronyms (머리글자)**: An abbreviation that forms a pronounceable word

- Examples:
 - CAT or computerized axial tomography
 - SOAP: subjective, objective, analysis, plan
 - CABG: coronary artery bypass graft
 - PERRLA: pupils equally round, reactive to light and accommodation

Basic Parts of Medical Words

- 1. Roots:** usually the middle of the word and its central meaning
- 2. Prefix:** a syllable at the beginning of the word which usually identifies some subdivision or part of the central meaning
- 3. Suffix:** comes at the end of the central meaning and refers to what or who is interacting or what is happening regarding it.

Prefix

- beginning of the word
- identifies some subdivision or part of the central meaning

Root

- middle of the word
- its central meaning

Suffix

- end of the word
- what is happening or who is referred to

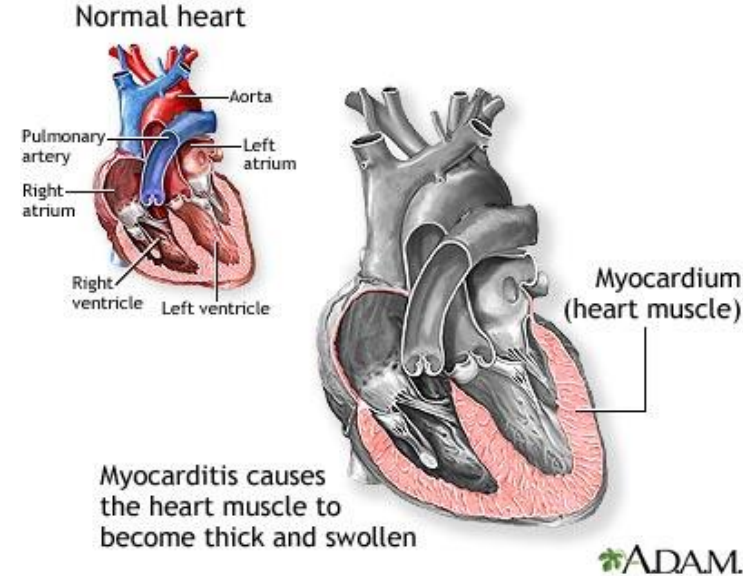
Example

- **Myocarditis (심근염)**

- Root (어근): card (referring to the heart)
- Prefix (접두사): myo (referring to the muscle)
- Suffix (접미사): itis (inflammation)

Meaning: inflammation of the muscle layer of the heart

Read the meaning of medical terms from the suffix, back to the beginning of the term, and then across.



Changes

- **Prefix change:**

Pericarditis (inflammation of the outer layer of the heart)

Endocarditis (inflammation of the inner lining of the heart)

- **Suffix change:**

Cardiologist (a physician specializing in the heart)

Cardiomyopathy (damage to heart muscle layer)

Cardiomegaly (enlargement of the heart)

Abbreviations

A: assessment 평가
AAROM active assistive range of motion 능동보조관절가동범위운동
AC joint acromioclavicular joints 견봉쇄골관절
ACL anterior cruciate ligament 전십자인대
ADL activities of daily living 일상생활동작
adm admission 입원
AE above elbow 주관절 위
AFO ankle foot orthosis 족관절 보조기
AJ ankle jerk 족관절 경련성 반사
AIIS anterior inferior iliac spine 전하장골극
AK above knee 슬관절 위
ALS amyotrophic lateral sclerosis 근위축성 측삭 경화증(루게릭병)
AP anterior-posterior 전-후방
AROM active range of motion 능동관절가동범위운동
ASIS anterior superior iliac spine 전상장골극
assist. assistance 보조, 도움
AVM arteriovenous malformation 동정맥 기형

BE below knee 주관절 아래
bid twice a day 하루에 두 번
BK below knee 슬관절 아래
BP blood pressure 혈압
BPI brachial plexus injury 상완신경총 손상
bpm beats per minute 분당 박동수
B/S bedside 침대 곁, 머리맡, 간호하는

CA carcinoma, cancer 암
CAD coronary artery disease 관상동맥질환
CC, C/C chief complain 주호소
CDH congenital dislocation of the hip 선천성 고관절 탈구증
CNS central nervous system 중추신경계
c/o complains of 불평, 주호소
cont. continue 계속적으로
COPD chronic obstructive pulmonary disease 만성 폐쇄성 폐질환
CP cerebral palsy 뇌성마비
CSF cerebral spinal fluid 뇌척수액
CVA cerebrovascular accident 뇌혈관사고
CWI crutch walking instructions 목발보행교육

DAI diffuse axonal injury 무용성 측삭 손상
D/C discontinued or discharged 중단, 퇴원
D.D delayed development 발달지연
dept. department 분야, 과
DIP distal interphalangeal joint 원위지절관절
DM diabetes mellitus 당뇨병
DTR deep tendon reflex 심부건반사
Dx diagnosis 진단
ECG, EKG electrocardiogram 심전도
EDH epidural hemorrhage 경막외 출혈
EEG electroencephalogram 뇌전도
EMG electromyogram 근전도
E.R. emergency room 응급실

FH family history 가족력
FUO fever, unknown origin 불명열, 알려지지 않은 원인
FWB full weight bearing 완전체중부하
Fx. fracture 골절

GBS guillian bare syndrome 길리안바레 증후군

HA, H/A headache 두통
HCD herniated cervical displacement 경추추간판전위
HLD herniated lumbar displacement 요추추간판전위
HNP herniated nucleus pulposus 수핵탈출증
hs at bedtime 취침시각
Htn hypertension 고혈압
Hx. hx history 병력

ICH intracerebral hemorrhage 대뇌출혈
ICU intensive care unit 중환자실
IDK internal derangement of knee 무릎내 이상
IM intramuscular 근육내
IV intravenous 정맥내

KJ knee jerk 슬관절 경련성 반사

LBP low back pain 요통
LE lower extremity 하지
LOC loss of consciousness 의식 상실
LP lumbar puncture 요추천자

MD medical doctor; doctor of medicine 의사

Meds. medications 투약

MFT muscle function test 근육기능검사

MP metacarpalphalanggeal 중수지절

MPS myofascial pain syndrome 근막통증후군

MS multiple sclerosis 다발성 경화증

NDT neurodevelopmental treatment 신경발달치료

neg. negative 부정적인

NPO nothing by mouth 아무것도 먹지 않는다.

NWB non weight bearing 체중부하하지 않은, 비체중부하

O: objective 객관적인

OA osteoarthritis 골관절염, 퇴행성관절염

od once daily 하루에 한 번

O.P. outpatient 외래환자

OP operation 수술

O.R. operating room 수술실

OT occupational therapist, occupational therapy 작업치료사, 작업치료

P: plan(treatment plan) 계획

PA posterior/anterior 후/전

para paraplegia 하반신 마비

pc after meals 식후

PCL posterior cruciate ligament 후십자인대

P.H. past history 과거병력

PMA progressive muscular atrophy 진행성 근위축증

PMD progressive muscular dystrophy 진행성 근이영양증

PNF proprioceptive neuromuscular facilitation 고유수용성 신경근 촉진법

PNI peripheral nerve injury 말초신경손상

pos. positive 긍정적인

poss possible 가능한

post-op after surgery(operation) 수술후

pre-op before surgery(operation) 수술전

PRE progressive resistive exercise 점진적인 저항운동

PROM passive range of motion 수동관절가동범위운동

PSIS posterior superior iliac spine 후상장골극

PT physical therapy, physical therapist 물리치료, 물리치료사

Pt., pt. patient 환자

PTA prior to admission 입원전

PTB patellar tendon bearing 슬개골전 부하

PWB partial weight bearing 부분체중부하

RA rheumatoid arthritis 류마티스성 관절염

RN registered nurse 간호사

R.O rule out 추정

ROM range of motion 관절가동범위

RROM resistive range of motion 저항관절가동범위

RSD reflex(response) sympathetic dystrophy

Rx treatment, prescription, therapy

SAH subarachnoid hemorrhage 지주막하 출혈

SC joint sternoclaviculay joint 흉쇄관절

SCI spinal cord injury 척수손상

SDH subdural hemorrhage 경막하 출혈

sec. seconds 초

SI(J) sacroiliac(joint) 천장관절

SLR straight leg raise 무릎을 신전한 채 다리를 올리는 것

SOAP subjective, objective, assessment, plan 주관적, 객관적, 평가, 계획

SOB shortness of breath 짧은 호흡, 단심

S.P status post 상태 후

Sx symptoms 증상

tab tablet 알약, 타블렛(뜯어낼 수 있는 종이철)

TB tuberculosis 결핵

TBI traumatic brain injury 외상성 대뇌 손상

TENS transcutaneous electrical nerve stimulator 경피신경전기자극치료기

THR total hip replacement 고관절 전대치술

TIA transient ischemic attack 일시적인 허혈성 발작

tid three times daily 하루에 세 번

TKR total knee replacement 슬관절 전대치술

TM(J) temporomandibular(joint) 측두하악관절

TNR tonic neck reflex(ATNR, STNR) 긴장성 경반사

UE upper extremity 상지

UMN upper moter neuron 상위운동신경원

US ultrasound 초음파

UV ultraviolet 자외선

v.o. verbal orders 구두의뢰

v.s. vital signs 생체 징후(맥, 호흡, 온도, 혈압)

w/c wheelchair 휠체어

wk. week 주

WNL within normal limits 정상제한범위내, 정상범위

wt. weight 체중, 무게

y/o years old 연령, 나이

yr. year 해, 년

In the doctor's notes, you may find the following: Pt. has hx of Htn, ASHD, CHF, MI in 1978, TIA in 1980.

Translation: The patient has a history of hypertension, arteriosclerotic heart disease, congestive heart failure, myocardial infarction in 1978, transient ischemic attack in 1980.

Orders written in the chart:

ASA q 4 hrs

BRP prn

NPO p̄ midnight

v.o. Dr. Smith/Janice Jones, O.T.

Translation:

Aspirin every 4 hours

Bathroom privileges whenever necessary

Nothing by mouth after midnight

Verbal order given by Dr. Smith to Janice Jones, O.T.

In PT note:

Rx: AROM ® ankle bid

Translation: Treatment: active range of motion right ankle twice per day.

In chart in doctor's initial note:
imp: COPD; R/O lung CA

Translation: impression: chronic obstructive pulmonary disease; rule out lung cancer

Physician's orders:
record I & O
all meds per IV
NPO
transfer pt. to ICU

Translation: record intake and output
all medications through intravenous (tube)
nothing by mouth
transfer patient to intensive care unit

Practice 1

- In PT note:
 - Treatment: once per day, activities of daily living training, ultrasound at 1.0 to 1.5 watts per centimeter squared to anterior aspect of right knee for 5 minutes

Practice 2

- In chart:
 - Dx: RA; R/O SLE.

Components

1. **Problem**

2. **S** = subjective

- ✓ Information gathered from the patient and associates

3. **O** = objective

- ✓ Information obtained from a therapist's tests/measures

4. **A** = Assessment

- ✓ Evaluation, diagnosis, and prognosis

5. **P** = Plan

- ✓ Plan of care

Problem (or Diagnosis)

- Medical diagnosis (e.g. adhesive capsulitis) or problem (e.g. frozen shoulder)
- Problem includes (as applicable):
 - Recent or past surgeries
 - Past conditions or diseases
 - Present conditions or diseases
 - Medical test results
 - Referral mechanism

Problem (or Diagnosis)- Examples

1. Dx: (L) hemiplegia resulting from craniotomy for removal of tumor on 9-12-2004. Hx of htn. Referring physician: Dr. Alexad.
2. 58-yr-old ♂ w/c (L) BK amputation on 12-17-2004, 2⁰ PVD. Hx of DM. Referring physician: Dr. Ollandern.

Subjective

- 환자의 주관적 정보
- 환자 또는 보호자에게 Interview 통해서 얻어진 주관적인 정보 기록
 - ① Name, Sex, Age
 - ② Onset
 - ③ Chief Complaint (C/C) : 주증상 or 주된 호소
 - ④ Present Illness (PI) : 현재 상태 및 이 병원을 방문하게 된 경위
 - ⑤ Past History (P/Hx) : 환자의 과거 병력 및 가족력 (흡연 유무, 기호식품, 취미활동 등)
 - ⑥ Family History : 가족력
 - ⑦ Social History : 환자가 사는 생활환경, 경제적 상황
 - ⑧ Review of System : 장애를 없애고 기능의 회복을 위해서 특별한 운동이나 동작 교육 시 혹은 필요할 경우, 이러한 훈련을 위해 심혈관계, 호흡기계, 근골격계에 대한 전신소견

Subjective

- Things the patient (or significant other) tells us about his/her:
 - Condition/*chief complaint*
 - Functional status/activity level
 - Cultural and religious beliefs
 - Employment status
 - Living environment
 - General health status
 - Social/health habits
 - Family health history

Subjective (cont'd)

- Medical/surgical history
- Medications
- Growth & development
- Other clinical tests
- Response to treatment intervention
- Goals
- Or – anything else relevant and significant to the patient's case or present condition

Subjective: Things to consider

- Use of the term “patient”
- Organization; concise
- Verbs: states, describes, denies, indicates, c/o (complain of)
- Quoting the patient verbatim
 - To illustrate confusion or memory loss
 - To illustrate denial
 - To describe pain

Subjective: Example 1. Information from the patient

- **S:** Current condition: c/o pain (R) ankle when (R) ankle is in dependent position. Denies any other pain or dizziness. States fell at home and felt (R) ankle “pop”.
Living environment: Describes 3 steps w/o a handrail at entrance to the home. Denies use of crutches.
Social/health habits: States played basketball 3x/wk.
Patient goals: Pt’s goal is to play basketball again.

Subjective: Example 2. Information from the family

- **S:** (All of the following information was taken from the pt's daughter. Pt. is unable to verbalize 2° to aphasia.) Functional status/activity level: Pt amb indep PTA....

Objective

- Things we find during the examination:
 - Systems review
 - Medical history when taken from the medical record
 - Functional skills
 - **Tests and measures**

Objective

- 치료사가 직접 이학적 검사를 통해 얻은 환자에 대한 객관적인 정보를 자세히 기록

- | | |
|--------------------------|------------------------|
| 1. General observation | 9. Reflex |
| 2. Mental state | 10. Functional ability |
| 3. Intellectual function | 11. Gait analysis |
| 4. Speech | 12. Cranial nerve test |
| 5. Muscle tone | 13. Cerebellum test |
| 6. MMT | 14. ASIA scale |
| 7. ROM | |
| 8. Sensory function | |

Objective - General observation

- 앉고, 서고, 걷는 양상, 전반적인 운동에 대한 효율성, 협응, 균형과 평가에 적응하는 능력을 관찰함.
- Gross & global assessment
 - How does pt. walk on the
 - Gait pattern & Speed
 - Balance function
 - Coordination
 - Etc..

Objective - Mental state

- 정신적 상태 / 의식수준
- 자극에 반응하며 환경에 적응하고 이용할 수 있는 뇌의 통합적 기능을 측정 (5단계 분류법) – Level of consciousness

등급	특징
Alert (청명)	의식이 깨끗하고 정상적인 상태
Confusion (착란)	경도의 의식장애로 기본적인 반사, 단순한 지적기능 및 보통의 명령에 대한 반응은 정상이나 지남력(orientation)의 장애로 시간이나 다른 사람을 식별하지 못하고 생각하는 것이 느리며 질문과 지시에 대한 감지, 반응 및 능력 등의 장애를 나타냄.
Drowsy (졸림/기면)	소리를 지르면 눈을 떴다가 가만있으며 다시 잠드는 상태
Stupor (혼미)	Non-communicable. Noxious stimuli를 localize 할 수 있다. Vigorous 하고 반복적인 자극에 의해서만 각성되고 각성된 동안에는 의식이 있는 것처럼 보임
Semi-coma (반혼수)	소리를 질러도 깨어나지 않으나 꼬집거나 아픔을 주면 눈을 끄며 가만히 있으면 또 자는 형태
Coma (혼수)	완전히 또는 거의 의식을 상실한 상태

- 대표측정법: Glasgow coma scale (GCS) (인지/능력선별검사)

Glasgow coma scale

- Severe: 8점 이하, 혼수상태
- Moderate: 9-12점, 즉시 이송
- Minor: 13점 이상, 94% 양호

신경학적 상태를 수치로 표현하여 좀더 객관적으로 정확히 파악하여 조기에 예후 추정하는
평가기준

Table 1: THE GLASGOW COMA SCALE AND SCORE

Feature	Scale Responses	Score Notation	
Eye opening	Spontaneous	4	자발적으로 눈을 뜸
	To speech	3	말을 해야 눈을 뜸
	To pain	2	통증이 있어야 눈을 뜸.
	None	1	눈을 뜨지 않음
Verbal response	Orientated	5	말을 잘하고, 분별적으로 함
	Confused conversation	4	혼동스러운 대화를 함. (기억력 상실)
	Words (inappropriate)	3	부적절한 단어를 사용함
	Sounds (incomprehensible)	2	이해하지 못하는 말을 함
	None	1	아무런 말을 못함
Best motor response	Obey commands	6	명령대로 움직임
	Localise pain	5	통증을 국소화함 (피하건, 막건)
	Flexion – Normal	4	통증에 대하여 정상적 굴절
	– Abnormal	3	통증에 대하여 비정상적 굴절
	Extend	2	통증에 대하여 신전 반응
	None	1	통증에 대하여 반응 없음
TOTAL COMA 'SCORE'		3/15 – 15/15	

Objective - Intellectual function

- 지적 능력 평가 등급
 - Intact (어떠한 부위에서든 즉각적으로 감지)
 - Impaired (어느 부위에서는 감지하고 어느 부위에서는 감지하지 못하는 경우 혹은 느리게 반응)
 - Absent (어느 부위에서도 감지하지 못하는 경우)

- ① General Orientation
- ② Attention span
- ③ Memory
- ④ Calculation skill
- ⑤ Mood and emotional reaction
- ⑥ Perception

➤ 대표측정방법: MMSE or MMSE-K

Objective – ① General orientation (지남력)

- Time, Place, Person에 대한 인지능력
- 등급: Good, Disturbed, Poor or Intact(+), Impaired(\pm), Absent(-)
- Time
 1. 올해가 몇 년도 인가?
 2. 지금이 일년 중 어느 계절인가?
 3. 오늘은 몇월 몇일 인가?
 4. 지금이 하루 중 어느 때인가?
- Place
 1. 여기가 어디입니까?
 2. 여기가 무엇을 하는 곳입니까?
- Person
 1. 이 사람은 누구입니까?
 2. 제가 무엇을 하는 사람입니까?

+: 정상적인 반응으로 정확하며 빠르게 반응

\pm : 감각의 반응이 느리거나 정확히 모르며 변하기 쉬울 때

-: 반응이 전혀 없을 때

Objective – Intellectual function

② Attention Span (집중력)

③ Memory

- 등급: Good, Disturbed, Poor

- Recent

1. 어제 무엇을 하고 지내셨습니까?
2. 어제 누구와 같이 있었습니까?
3. 어제 어디에 계셨습니까?

- Remote

1. 고향이 어디십니까?
2. 부모님 성함이 어떻게 되십니까?
3. 어느 학교를 졸업했습니까?
4. 과거에 직업이 무엇이었습니까?

④ Calculation Skill

- 100에서 7을 빼보십시오.

Objective – Intellectual function

⑤ Mood and emotional reaction (감정상태)

⑥ Perception

A. Agnosia (실인증): 감각, 지능 장애 없고, 주의력 문제가 없음에도 불구하고 자극을 인식하지 못하는 증상

- Visual agnosia (시각 실인증)
 - 망막에서 후두엽의 시각전도로는 정상인데, 본 것을 인식하지 못하는 상태를 말하며, 시력은 보존하고 있으므로 형태와 색은 대답할 수 있어도 본 대상이 무엇인지 모른다
 - 후두엽 양측의 광범위한 손상
 - “(시계를 보여주면서) 이것은 무엇입니까?”
- Tactile agnosia (촉각 실인증)
 - “(눈을 감고 연필을 만져보게 한 후) 이것이 무엇입니까?”
- Auditory agnosia (청각 실인증)
 - 말이나 단어, 특정 소리를 듣지 못함.

– B. Apraxia (실행증)

- 뒷장 설명

Objective – Intellectual function

⑥ Perception

B. Apraxia (실행증)

- ✓ 기본적인 운동능력 및 감각능력에 장애가 없고 환자가 지시자의 말을 충분히 이해하고 수행할 수 있을 정도의 의식 수준을 유지하고 있음에도 불구하고, 운동계획을 세우는 대뇌의 영역에 나타난 이상 증상으로 인하여 이미 학습되어 할 수 있는 운동이나 몸짓을 못하는 장애

① Ideational apraxia (관념 실행증)

- ✓ 우위반구의 두정엽(parietal lobe; 감각영역 = 감각통합 및 공간인식)의 광범위한 병변
- ✓ 환자는 요구된 운동·행위를 이해하기 힘들고 순서도 납득하지 못한다. 간단한 연속된 동작이 요구되었을 때 명백해지고 행위가 거의 이루어지지 않은 채 진전하지 않는다.
- ✓ “주전자에 있는 물을 컵에 따라보십시오.”

② Ideomotor apraxia (Ideo-kinetic apraxia; 관념운동성 실행증)

- ✓ 좌측우위 두정엽 하부의 병소
- ✓ 요구된 동작을 이해할 수 있는데 행하는 것이 곤란
- ✓ “혀를 앞으로 내밀어 보십시오.”

③ Constructional apraxia (구성 실행증)

- ✓ 개개의 운동에는 장애가 없는데 도형을 그리거나 나무쌓기를 하거나 하는 공간적 행위의 장애
- ✓ 좌두정 후두부(우반구에서도 볼 수 있다) 장애

- <http://www.youtube.com/watch?v=Flf7irhXNWg>

MMSE or MMSE-K

- The Mini Mental State Examination
- = Folstein test
- A brief 30-point questionnaire test that is used to screen for cognitive impairment.
- Used in
 - Medicine to screen for dementia
 - Estimate the severity of cognitive impairment and to follow the course changes in an individual over time

MMSE

Maximum Score	Score	ORIENTATION	
5	()	What is the (year), (season), (date), (day), (month)	
5	()	Where are we (state), (county), (town or city), (hospital), (floor)	
REGISTRATION			
3	()	Name 3 common objects, (e.g. 'apple', 'table', 'penny'). Take 1 second to say each. Then ask the patient to repeat all 3 after you have said them. Give 1 point for each correct answer. Then repeat them until he/she learns all 3. Count trials and record.	
Trials:			
ATTENTION AND CALCULATION			
5	()	Spell 'world' backwards. The score is the number of letters in the correct order (D__ L__ R__ O__ W__)	
RECALL			
3	()	Ask for the 3 objects repeated above. Give 1 point for each correct answer. [Note: recall cannot be tested if all 3 objects were not remembered during registration.]	
LANGUAGE			
2	()	Name a 'pencil' and 'watch' (2 points)	
1	()	Repeat the following "No, ifs, ands, or buts"	(1 point)
3	()	Follow a 3-stage command: 'Take a paper in your right hand, Fold it in half, and Put it on the floor'	(3 points)
Read and obey the following:			
1	()	Close your eyes	(1 point)
1	()	Write a sentence	(1 point)
1	()	Copy the following design	(1 point)

Score Ranges

24 – 30

Normal

18 – 23

Mild dementia

10 – 17

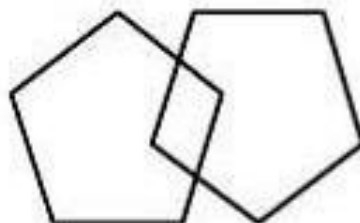
Moderate dementia

<10

Severe Dementia

MMSE-K

1. 오늘은 년 월 일 요일 계절 (각 1점 = 0-5점)
2. 당신의 주소는 도(시) 군(시, 구) 면(동) 리 (각 1점 = 0-4점)
3. 여기는 무엇을 하는 곳입니까? (마당, 안방, 화장실, 진찰실 등) (1점)
4. 기억력 검사를 한다고 미리 말한 뒤, 서로 연관이 없는 물건 이름 세가지 (예: 나무, 자동차, 모자)를 천천히 정확하게 불러준 뒤 곧바로 따라하게 한다. (0-3점)
5. $100-7=$ $-7=$ $-7=$ $-7=$ $-7=$ (0-5점)
 **전항과의 차이가 7이면 맞는 것으로 간주
6. 물건 이름 맞추기 (연필, 시계 보여주고) (0-2점)
7. 3단계 명령수행
 '오른손으로 종이를 집어서 / 반으로 접어서 / 두툼위에 놓기' (0-3점)
8. 앞에서 이야기한 물건 이름(예: 나무, 자동차, 모자) 다시 회상 (0-3점)
9. 도형 복사 : 두개의 5각형이 겹쳐져 있는 그림을 보고 복사하기 (0-1점)



10. '간장공장 공장장' 따라하기 (0-1점)
11. '옷은 왜 빨아서 입습니까?' (0-1점)
 **깨끗하라고, 더러워서 등 위생에 대한 답을 할 때 1점
12. '길에서 남의 주민등록증을 주었을 때 어떻게 하면 주인에게 돌려줄 수 있겠습니까?' (0-1점)
 **우체국, 파출소와 관련된 대답이면 1점

Objective – Muscle tone

- 근긴장 상태
- Modified Ashworth Scale (MAS)은 비정상적인 근 긴장상태(hypotonia – flaccid / hypertonia – Spasticity)를 평가하는 이유.

<u>Modified Ashworth Scale for Grading Spasticity</u>		
Grade	Description	
0	No increase in muscle tone	
1	Slight increase in muscle tone, manifested by a catch and release or by minimal resistance at the end of the ROM when the affected part(s) is moved in flexion or extension	
1+	Slight increase in muscle tone, manifested by a catch, followed by minimal resistance throughout the remainder (less than half) of the ROM	
2	More marked increase in muscle tone through most of the ROM, but affected part(s) easily moved	
3	Considerable increase in muscle tone, passive movement difficult	
4	Affected part(s) rigid in flexion or extension	

Muscle tone

- Muscle tone (residual muscle tension or tonus) is the continuous and passive partial contraction of the muscles, or the muscle's resistance to passive stretch during resting state. It helps to maintain posture and declines during REM sleep.
- Purpose
 - If a sudden [pull](#) or stretch occurs, the body responds by automatically increasing the muscle's tension, a reflex which helps guard against danger as well as helping to maintain [balance](#). Such near-continuous innervation can be thought of as a "default" or "steady state" condition for muscles. There is, for the most part, no actual "rest state" insofar as activation is concerned. Both the [extensor](#) and [flexor](#) muscles are involved in the maintenance of a constant tone while "at rest." In skeletal muscles, this helps maintain a normal posture.

Muscle tone

- Pathological tonus

1. Hypotonia (abnormally low)

- In lower motor neuron disease like poliomyelitis
- Present clinically as muscle flaccidity, where the limbs appear floppy, stretch reflex responses are decreased, and the limb's resistance to passive movement is also decreased

2. Hypertonia (abnormally high)

- In upper motor neuron diseases like lesions in pyramidal tract and extrapyramidal tract. Hypertonia can present clinically as either spasticity or rigidity.

Objective - MMT

- MMT

- Manual Muscle Test

- Muscle strength

- N / G / F+ / F / F- /
P+ / P / P- / T / Z

- 때때로, muscle tone
을 MMT에 포함시
켜 측정하는 경우도
있음.

Normal (5)	Withstands strong pressure in test position.
Good plus (4+)	Withstands moderate to strong pressure.
Good (4)	Withstands moderate pressure.
Good minus (4-)	Withstands slight to moderate pressure.
Fair plus (3+)	Withstands slight pressure.
Fair (3)	Holds test position against gravity but tolerates no additional pressure.
Fair minus (3-)	Sags from test position or only moves through partial range of motion against gravity (>50% of motion).
Poor plus (2+)	Moves through 50% of motion or less in antigravity position, or holds against resistance in gravity-eliminated position (horizontal plane).
Poor (2)	Moves through complete range in horizontal plane.
Poor minus (2-)	Moves through partial range in horizontal plane.
Trace (1)	Slight contraction, but no visible movement of body part detected.
Zero (0)	Complete lack of muscle contraction.

Objective – MMT (Key muscle)



Motor Level	Key Muscles
C1-4	Sensory level and Diaphragm
C5	Biceps, Brachialis, Brachioradialis
C6	Extensor carpi radialis longus & brevis
C7	Triceps
C8	Flexor digitorum profundus
T1	Interossei
T2-L1	Sensory level and
L2	Iliopsoas
L3	Quadriceps
L4	Tibialis anterior
L5	Extensor hallucis longus
S1	Gastrocnemius, Soleus
S2-5	Sensory level and Sphincter

Objective - ROM

- ROM
 - Range of Motion
 - AROM
 - AAROM
 - PROM
 - Measure joint angles or ROM at involved joints.

Objective – Sensation

- Superficial sensations
- Proprioceptive sensations (Deep sensation)
- Combined (cortical) sensations
 - 두뇌의 neurological exam 에서 기술함.

Objective - Reflex

- Reflex
 1. Superficial reflex (표재성 반사)
 2. Deep reflex (심부 반사)
 3. Pathological reflex (병적 반사)
 4. Visceral reflex (내장 반사)
- UMN (upper motor neuron) 이상
 - 1: 약해지거나 사라짐
 - 2: 항진
 - 3: 정상인에서는 볼 수 없으나, 병변 시 나타남

Objective – Superficial Reflex

1. Corneal reflex (각막 반사)

- ✓ Cranial N. V (afferent), VII(efferent)
- ✓ 깨끗한 솜을 뽀족하게 하여 눈의 바깥쪽 각막에 가볍게 대봄. 솜을 보고서 눈이 깜빡이는 것을 막기 위해 피검자에게 반대쪽을 보게함. 솜이 닿는 순간 양쪽 눈을 깜박이면 정상

2. Pharyngeal reflex (인두반사)

- ✓ Cranial N. IX(afferent), X (efferent)
- ✓ 설압자를 인두에 대면 인두근육의 불수의적 수축 나타남.
- ✓ Gagging reflex (구토 반사)

3. 복벽반사

- ✓ Epigastric reflex (심와반사, T5-7)
- ✓ Upper abdominal (상복, T7-9)
- ✓ Mid-abdominal (중복, T9-11)
- ✓ Hypogastric (하복, T11-12)
- ✓ 누운 자세에서 무릎을 세워 복부근을 이완시킨 뒤 배꼽 주위의 복벽에 선을 긋듯 가볍게 자극을 주면 복벽근의 수축이 유발됨.
- ✓ <http://www.youtube.com/watch?v=4oo1oDQSfPs>

Objective – Superficial Reflex

4. Cremasteric reflex (거고근 반사)

- ✓ L1-2
- ✓ 누운 자세에서 다리를 약간 벌린 후 대퇴 안쪽 위측의 피부를 가볍게 자극하면 같은 쪽의 고환이 반사적으로 따라 올라감.

5. Anal reflex (항문반사)

- ✓ S2-4
- ✓ 회음피부를 자극하거나, 손가락을 항문에 넣으면 항문 괄약근이 수축함.

6. Bulbocavernous reflex (구해면체 반사)

- ✓ S2-4
- ✓ 음경 배면의 피부를 꼬집거나 찌르면 구해면체근이 수축함.

7. Plantar reflex (족저 반사)

- ✓ L4-5, S1-2
- ✓ 발바닥을 자극하면 엄지 발가락이 발바닥쪽으로 구부러진다
- ✓ <http://www.youtube.com/watch?v=9nNb32VWA7Q>

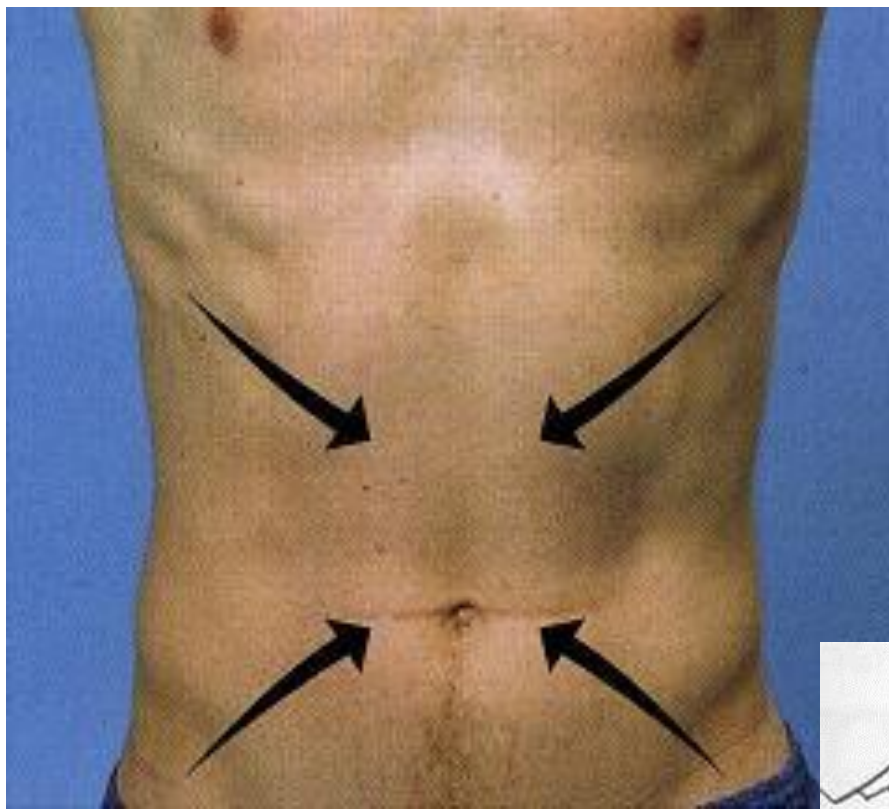


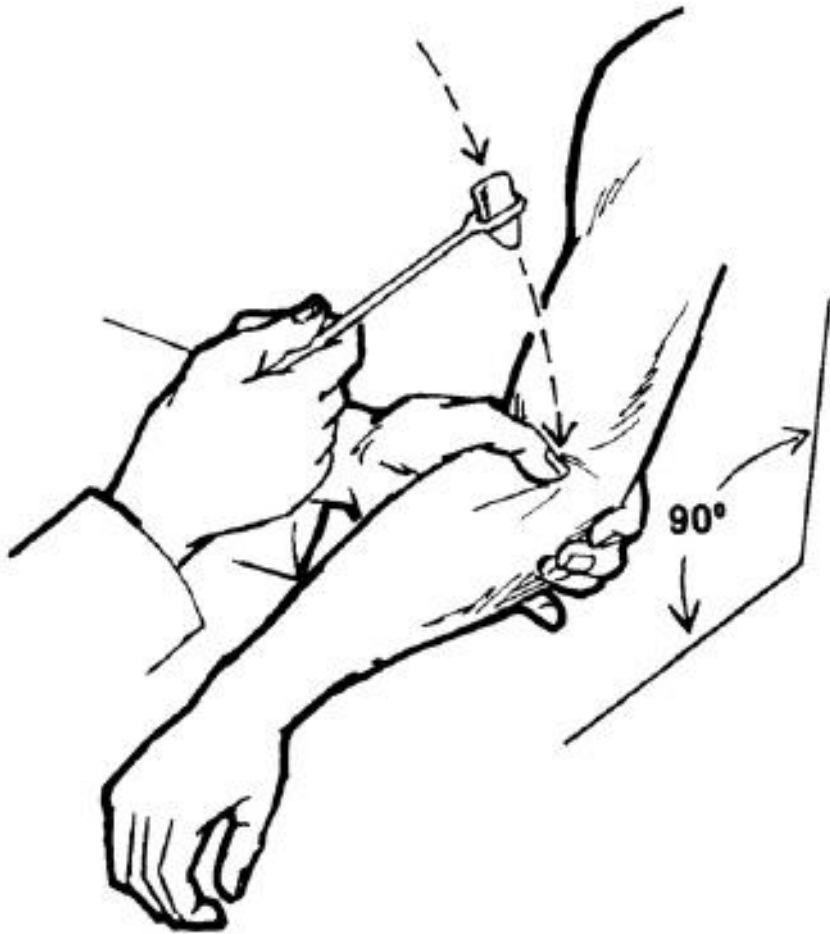
Figure 1-35
The extensor plantar response.

Objective – Deep Reflex

- DTR 검사 (0~4 grade) : 객관적 평가 위해
 - 0 : 근수축 X
 - 1 : 경미한 반응
 - 2 : 정상반응
 - 3 : 활발한 반응
 - 4 : 과도한 반응

<http://www.youtube.com/watch?v=eCrY0-m5TFU>

- ① Jaw reflex (악간대 반사): V. Nerve (Masseter ms.)
 - ✓ 정상인에서 잘 나타나지 않음
- ② Bicep reflex (이두근 반사): C 5-6
 - ✓ Biceps tendon 자극
- ③ Triceps reflex (삼두근 반사): C7-8
 - ✓ Olacranon process 바로 위쪽 triceps tendon 자극
- ④ Knee jerk or Quadriceps reflex (무릎 or 슬개건 반사): L3-4
- ⑤ Achilles reflex (발목 반사): S1-2



Biceps reflex



Triceps reflex

Objective – Pathological Reflex

- UMN 시 나타나며, 정상 시에는 소뇌와 대뇌의 억제작용에 의하여 나타나지 않은 반사
 - 추체로 병변 시, LMN이 상위 중추의 영향에서 벗어나 소뇌의 억제작용이 없어지므로 나타남.
1. Barbinski's reflex (바빈스키 검사)
 2. Chaddock's toe reflex (차도크 엄지발가락 검사)
 3. Oppenheim's reflex (오펜하임 반사)
 4. Gordon's leg reflex (고오든 다리 반사)
 5. Schaefer's reflex (셰퍼 반사)
 6. Ankle clonus reflex (족간대 반사)
 7. Hoffman's sign (호프만 현상)

Objective - Functional ability

- 현재의 기능적 상태와 ADL 능력을 평가
 - 기능적 평가 항목
 - ADL
 - IADL
- 뒤의 neurological exam에서 Functional status and activity level 을 참조

ADL의 분류

Basic Activity of Daily Living (BADL)

- Katz 등 (1963)
 - : feeding, dressing, toileting, bathing, transfer, continence (bowel/bladder)
- 후에 추가
 - : Self-care (grooming), mobility, communication, personal device care

Instrumental Activity of Daily Living (IADL)

- Schuling 등 (1993)
 - : ADL을 self-care, mobility등의 BADL에 추가하여, 복잡한 인지, 지각 기술을 필요로 하고, 더 고급화된 환경과의 상호관계 기술을 요하는 IADL을 정의함
- using telephone, traveling (driving, 대중교통이용), shopping, preparing meal, housework, laundry, taking medicine, managing money

Objective - Gait analysis

- Gait pattern (normal , pathologic) – **Next page**
 - Steppage gait (foot drop / dorsiflexor weakness)
 - http://www.youtube.com/watch?v=TijuPg8_JhY
 - Scissors gait (Bilateral spastic paresis of legs)
 - <http://www.youtube.com/watch?v=eLuxTFHoZAA>
- Assistive devise (axillary crutch, straight, cane, walker, N/A)
- Weight bearing status(NWB, PWB, FWB)
- Distance ambulated
- Stair up & down



Abnormal gait pattern

- Steppage gait
 - Foot drop / dorsiflexor weakness
 - Either drag feet or lift high
- Scissors gait
 - Bilateral spastic paresis of legs
 - Stiff gait; each leg advances slowly, thighs cross forward with short steps
- Parkinsonian gait
 - Stooped posture, head & neck forward
 - Slow initiation of gait
- Sensory ataxia
 - Proprioceptive loss
- Hemiplegic gait

Objective - ASIA scale

- **A = Complete:** No motor or sensory function is preserved in the sacral segments S4-S5.
- **B = Incomplete:** Sensory but not motor function is preserved below the neurological level and includes the sacral segments S4-S5.
- **C = Incomplete:** Motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a muscle grade less than 3.
- **D = Incomplete:** Motor function is preserved below the neurological level, and at least half of key muscles below the neurological level have a muscle grade of 3 or more.
- **E = Normal:** motor and sensory function are normal

Objective - ASIA scale

Grade	Description	Motor & Sensory sparing below the zone of partial preservation
A	완전손상	신경학적 수준 이하의 모든 운동기능 및 감각 기능 결손
B	불완전 손상 감각만 유지	신경학적 수준 이하의 운동기능 마비 감각기능만 유지
C	불완전 손상 기능적 운동 불가	신경학적 수준 이하의 최소한의 수의적 운동기능 보존 (주요 근력 Fair 미만)
D	불완전 손상 기능적 운동 가능	“기능적인 사용“ 수의적 운동 기능 보존 (주요 근력 Fair 이상)
E	완전한 회복	운동기능 및 감각기능 모두 회복 (반사는 비정상일 수 있음)

Objective : Things to Consider

- Organize and categorize
 - Use headings, caps (대문자) & underlining
 - Use tables or charts
 - Use flow sheets
- Be specific
 - State the affected anatomy
 - State information in measurable terms
 - State type (e.g. transfer to where from where?)

Objective : Example

O: HISTORY: CHF, COPD.

SYSTEMS REVIEW:

Cardiovascular/ pulommonary system: BP 140/85. HR 90. RR 20.

Integumentary system: skin thin & fragile bilat LEs.

Musculoskeletal system: gross symmetry impaired in LEs standing.

Neuromuscular system: Gait unimpaired. Transfers impaired.

Communication: Age appropriate and unimpaired.

Affect: emotional/behavioral responses unimpaired.

Cognition: level of consciousness unimpaired. Orientation to person, place and time impaired ...

TESTS AND MEASURES:

AROM: WNL in UEs and LEs except 120° (L) shoulder flexion.

Strength: 5/5 in UEs ...

Assessment

1) Problem list (문제목록 작성)

- 주관적 및 객관적 자료를 통하여 얻어진 정보를 종합하여 현재 환자의 문제점 기록.
- 문제점을 중요도 순으로 나열
- 중요도는 치료사와 환자 및 환자 보호자의 의견 반영

Assessment

- Your professional opinion
- PT Diagnosis
 - Specific practice pattern or patterns (primary and secondary)
 - Inconsistencies
 - Further testing needed
 - Consultations and/or referrals w/ other practitioner(s) needed (협의, 소개)

Assessment (cont'd)

- Prognosis (예후): predict the level of improvement in function and the amount of time needed to reach that level.
- Consider:
 - Living environment
 - Patient's condition prior to onset
 - Concurrent illnesses or medical conditions (co-morbidities; 동시이환)

Assessment: Example

A: DIAGNOSIS: Pt's ↓ ROM & strength (L) wrist cause pt difficulty in ADLs such as eating and writing. Pt's work involves typing over 50% of the time and pt is unable to type w/o pain. Practice pattern:

Musculoskeletal G: Impaired joint mobility, muscle performance and ROM associated w/ fracture.

PROGNOSIS: Pt. has good rehab potential; will progress well with PT and return to work w/ full ROM and strength and w/o pain in six weeks.

Plan

1) Treatment Plan

- 환자 치료에 대한 계획으로서 각 단기목표를 달성하기 위해 하나 이상의 치료법을 제시 할 수 있다.

2) Goals

① Short Term Goal (STG; 단기목표)

- 일반적으로 4개 정도의 단기목표를 2-3주 이내로 설정.
- 치료사는 단기목표를 설정하고 우선순위를 결정한다.
- 단기목표는 치료의 효율을 높이고 비용의 효율을 조장하며 치료를 환자의 문제와 특정요구사항 쪽으로 돌리기 위해 작성한다.

② Long Term Goal (LTG; 장기목표)

- 재활의 마지막 단계에서의 환자의 수행 기대치
- 장기목표를 통해 치료의 기능적 결과들을 구체화시켜 나아감.
- 장기목표의 설정을 통해 입원기간이나 퇴원시기에 환자의 기능적 수준을 예측
- 장기목표기간은 대체적으로 2-3개월을 단위로 잡음.

Plan: Interventions

- Must include:
 - Frequency (per day or per week) that pt will be seen
 - Interventions
- May also include:
 - Location of treatment (bedside, in dept., at home)
 - Treatment progression
 - Plan for further assessment or reassessment
 - Plans for discharge
 - Patient & family education
 - Equipment needs or equipment ordered
 - Referrals to other services

Plan: Interventions - Example

- Intervention plan: BID in dept.: amb training w/ a walker beginning w/ 50% PWB (L) LE & progressing wt. bearing & distance as tolerated; transfer training; pt will be given written and verbal instructions in exercise program to be performed in his room (attached); AAROM progressing to AROM exercises (L) knee emphasizing quadriceps functioning.

Note Writing and the Process of Clinical Decision-Making

SOAP Note	Patient/Client Management Process	Patient/Client Management Note
Problem Subjective Objective	EXAMINATION	History Systems Review Tests & Measures
Assessment (includes Diagnosis and Prognosis)	EVALUATION	Diagnosis Prognosis
Plan of Care (Expected Outcomes, Anticipated Goals and Interventions, including patient education)	PLAN OF CARE	Expected Outcomes Anticipated Goals Interventions, including patient education
	OUTCOMES	

EXAMPLES OF SOAP NOTES FOR ACUTE PROBLEMS

EXAMPLE #1

Complete HPI

S: MS is a 77 y/o woman who presents with a rash. The rash began one week ago and first appeared on her back and extended to her abdomen on the left side. She first noticed the rash after working in her garden. For the first 3 days she had no associated symptoms, however on the 4th day, she began to experience severe pain “like being stung by a bee”. The pain is worse in the evenings and she is having difficulty sleeping. She has been taking Tylenol every 4-6 hours and using Vitamin E lotion with minimal relief. She is worried she may have poison ivy.

One paragraph summary of medical history & medications

She has a history of hypertension. Her medications include: Nifedipine XL 30mg daily and Metoprolol 50mg BID.

B1 receptor blocker

Pulse rate

One sentence summary of the problem

Respiratory Rate

O: MS is an elderly woman who appears energetic and in no distress. VS: BP 130/80, P 60, RR 12, T 37°. Skin exam reveals an erythematous rash of grouped vesicles with clear fluid, approximately half of which are crusted over. The rash extends from the midline of the back anterior to the left side of the T12/L1 dermatome region.

Temperature

수포

A: A new onset painful rash in a dermatomal distribution. This is most likely secondary to herpes zoster because of the location, distribution and associated pain. A less likely possibility is contact dermatitis, given her recent gardening. She may also have a cellulitis, but the lack of temperature doesn't support this.

Differential diagnosis and clinical reasoning for an acute problem

P: #1 MS will continue to use Tylenol for pain relief.
#2 MS was informed that she may continue to experience pain after the rash resolves.
#3 MS should return to clinic if the pain becomes more severe or if she develops warm, redness or a fever.

Midtown Physical Therapy

123 Main Street
Anytown KS 12345
Tel: (346) 123-6789
Fax: (346) 123-6780

Physical Therapy Evaluation

Client Name: Little, Laura N
Claim Number: 20060301-89043
Insurance Company: Blue Cross Blue Shield
Client ID: 093-91-9475
Account Name: MYA 3/01/2006
Date of Birth: 3/22/1980 **Age:** 25 years
Gender: Female

Evaluation Date: 3/6/2006
Date of Injury: 3/1/2006
First Visit Date: 3/6/2006
Ref Physician: Dr. Cynthia Bloom
Diagnosis 1: TRAUM ARTHROPATHY-SHLDER (716.11)

Subjective

Chief Complaint:

- Right Shoulder pain.
- Decreased Right Shoulder ROM.

Current Medications: 800mg Ibuprofen daily

Symptoms:

- Severe pain in R shoulder(s) radiating to R upper back occurring 3 to 5 times per hour and lasting 1 to 3 minute(s) since car accident.
- Moderate decreased range of motion in R shoulder(s) since car accident.

Activities of Daily Living

Activity: Lifting 50lbs required for work
Aggravation: Pain increases from mild to moderate after 10 lbs
Limitation: Client has to stop the activity after 20 lbs because of pain

Objective

Tests & Measures

Gait, locomotion and balance: Functional use of arm during gait

Muscle performance (strength, power, endurance): No significant deficits in resisted movements.

Posture:

- Forward head position
- Rounded shoulders
- Flattening of thoracic spine

Range of motion:

Shoulder Complex - Right - Active - 3/6/2006

Movement	Position	Measure	Pain	Movement Quality
Flexion	Supine	150°	None	Smooth
Extension	Prone	50°	None	Smooth
Abduction	Supine	140°	Moderate	Smooth
Medial (Intern.) Rotation	Supine	90°	None	Smooth
Lateral (Extern.) Rotation	Supine	45°	Moderate	Segmented

Other:

Community and Work reintegration:

Delivery truck driver. Needs to be able to lift and carry 50lbs packages.

Palpation

Muscle	Symptom	Location	Severity
Upper Trunk			
Upper Back			
Erector Spinae Group	Inflammation	R	

Assessment

Assessment: Impaired joint mobility, motor function, muscular performance and range of motion associated with capsular restriction of the right shoulder: right shoulder adhesive capsulitis.

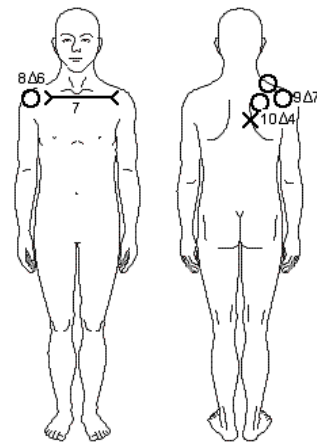
Long-term Goals: Client will be able to lift and carry up to 50 lbs up to 1000 feet with a 1 minute break every 500 feet 10 times a day Monday to Friday with no more than mild fatigue within 60 days.

Short-term Goals: Client will be able to lift and carry up to 25 lbs up to 200 feet with a 1 minute break every 100 feet 3 times a day Monday to Friday with no more than moderate pain within 14 days.

Plan

Treatment Plan: Manual Therapy Techniques and Therapeutic Exercises, R shoulder(s), three times a week for 4 weeks, 30 minute sessions, to increase mobility and strength to VNL as compared to L side to perform work duties.

Homework and Selfcare: Initiate stretching of R shoulder(s) for 10 minutes once a day. Gave stretching handout.



Legend

○ Pain

× Adhesion

⊗ Short

Frequency/Duration: 3 times per week for 4 weeks

Amount:

Certification Dates: From 3/1/2006 To 4/15/2006

Midtown Physical Therapy

123 Main Street
Anytown KS 12345
Tel: (346) 123-6789
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Physical Therapy Evaluation

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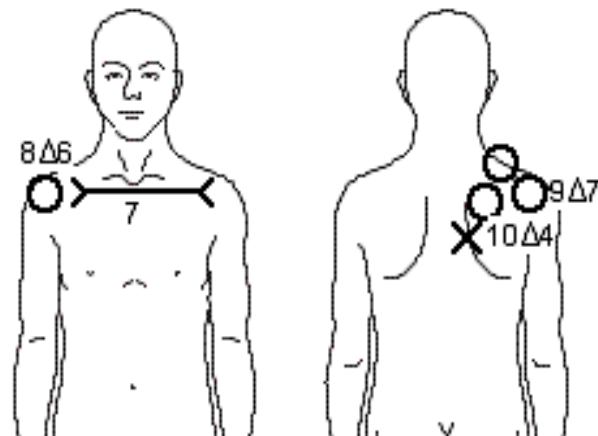
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Shoulder Complex - Right - Active - 3/6/2006

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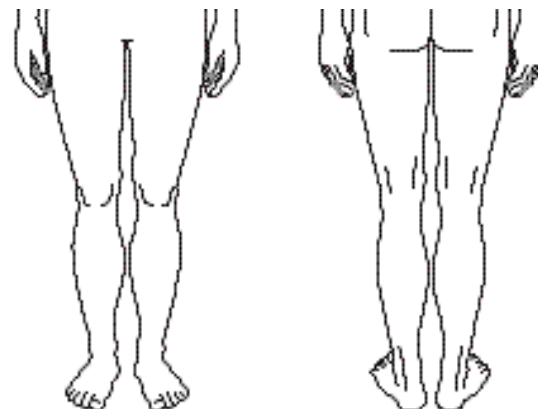
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<i>Muscle</i>	<i>Symptom</i>	<i>Location</i>	<i>Severity</i>
UpperTrunk UpperBack Erector Spinae Group	Inflammation	R	



Legend

○ Pain

✕ Short

✕ Adhesion

Assessment

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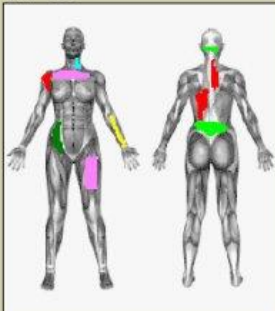
Maintain SOAP Notes

10/09/08 Attending: Velma Jensen
 07/25/08 Attending: Stephen Krieger Lmt
 03/06/08 Attending: Velma Jensen
 01/18/08 Attending: Velma Jensen
 12/23/07 Attending: Velma Jensen
 12/18/07 Attending: Ken Bronson
 12/13/07 Attending: Velma Jensen

New **Delete** **Save** **Undo** **Print** **Copy**

Notes for: Lois Airstein
 Note Type: SOAP

SOAP - 100%



Pen width = 2

Change Image **Undo Last** **Annotate** **Zoom** **Grayscale** **Draw Line**

Notes

S Since the last visit the patient reports a decrease in her low back pain. She notes that the pain continues to be more localized to the region of the right PSIS. She is no longer experiencing the diffuse pain that was extending down her right leg.

O Vitals: pulse = 72 bpm, BP = 120/72 right, respiration = 12/min, temperature = 98.6 F (these results would be written in the margin below the date). The following orthopedic tests were performed and found to be negative: cervical compression & depression, Kemp's seated & Lewin's tests. Gross ROM in the cervical and thoracic spine was observed and was full and painfree. Motion palpation detected loss of: right rotation - C3 & L3, extension - L4, left rotation - C2. The right upper cervical paravertebral musculature was found to be moderately tender to moderate palpation pressure, markedly taut with a small involuntary twitch noted during palpation.

A Thoracic outlet syndrome with radial nerve neuralgia primarily arising from hypertonicity of the right pectoralis minor. This is with an overlay of myofascial pain referral from the right anterior scalene muscles and associated segmental dysfunction of the upper thoracic and lower cervical spine.

P Today the patient received supine cervical manipulation for the above noted segments. This was performed while maintaining the neck in slight flexion and minimizing rotation and lateral flexion. Soft tissue release was performed using a thumb contact into the right upper trapezius muscle to patient's tolerance until a relative degree of muscle relaxation was achieved. She is to perform this exercise twenty times (10 per each side) twice per day.

Preview - page 1 of [1..2]

Treatment Notes

Date of Therapy: 10/09/2008 **Patient/Client:** Lois Airstein
Date of CURRENT: (Injury, Illness, or Pregnancy)


S: Since the last visit the patient reports a decrease in her low back pain. She notes that the pain continues to be achy but is more localized to the region of the right PSIS. She is no longer experiencing the diffuse pain that was extending down her right leg.

O: Vitals: pulse = 72 bpm, BP = 120/72 right, respiration = 12/min, temperature = 98.6 F (these results would be written in the margin below the date). The following orthopedic tests were performed and found to be negative: cervical compression & depression, Kemp's seated & Lewin's tests. Gross ROM in the cervical and thoracic spine was observed and was full and painfree. Motion palpation detected loss of: right rotation - C3 & L3, extension - L4, left rotation - C2. The right upper cervical paravertebral musculature was found to be moderately tender to moderate palpation pressure, markedly taut with a small involuntary twitch noted during palpation.

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Attending Therapist: Velma Jensen **Signature:** _____



Legend:

Ache	Stabbing	trigger point	edema	Tight
------	----------	---------------	-------	-------

- Page 1 -

Different types of SOAP note

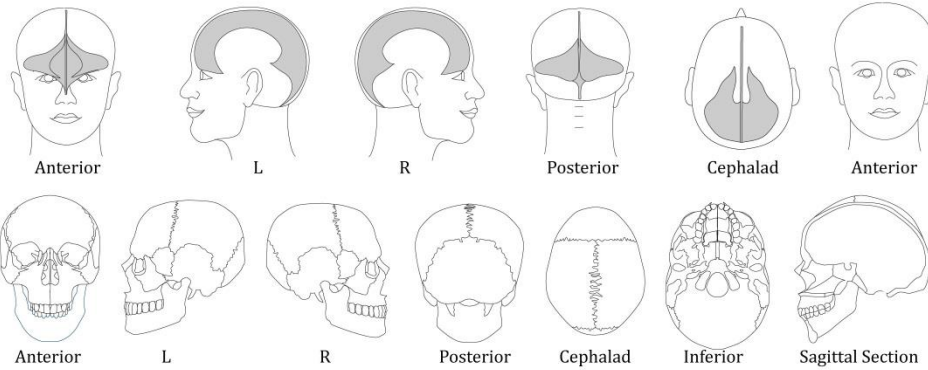
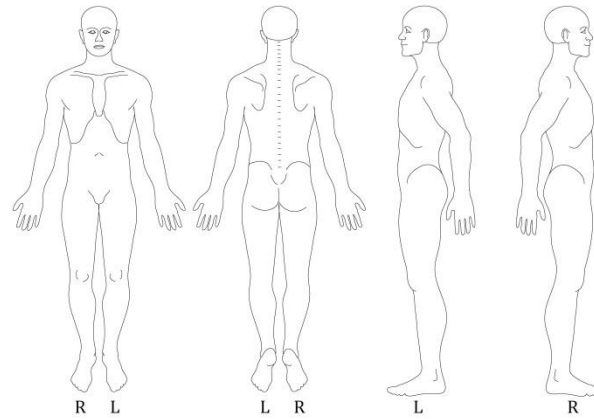
CranioSacral Therapy Session Notes

Date: _____

Client's Name: _____

Session Time: _____

Practitioner's Name: _____



S.

O.

A.

P.

Recent trend

- Heun L (1998)

CASE NAME: Barber		TOTAL SCORE: 4.4														
Subjective S	Emma is a pleasant 76 y.o. white female who resides at Pleasant Valley N.H. and presented to the clinic today with c/o weakness and genital/buttock pain. The weakness and decreasing ability to care for herself were the reason for admission to the nursing home. Her tiredness and weakness has progressively worsened since then. She has lost 24 pounds over the last year, and she admits to decreased appetite. The problems with her buttocks began shortly after entering the home, which she attributes to being made to sit in urine and feces for an excessive length of time.															
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SUBJECTIVE SCORE: 5.0		<input type="button" value="Wilson"/> <input type="button" value="Barber"/> <input type="button" value="Mulligan"/>														
Objective O	76 y.o. white female, presents in good but weakened state of health, not in acute distress. Patient is pleasant, alert and oriented X3. Skin is warm, dry, and loose. There is echymoses on her arms. Area on the left elbow is 4 - 5 cm and the area on the right upper arm looks like a hand print. Heart is regular and rhythmic without murmur. Lungs clear to auscultation bilaterally. Abdomen is flat soft nontender. No masses palpated. BS X 4.															
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OBJECTIVE SCORE: 3.7		<input type="button" value="Wilson"/> <input type="button" value="Barber"/> <input type="button" value="Mulligan"/>														
Assessment A	I have several concerns about Emma's health at this time. 1) I am concerned that the quality of care she is getting at this care center may be substandard. 2) I feel that she is not being adequately stimulated mentally and physically. 3) I feel there is a depression component involved. 4) Diaper rash on genitals and buttocks. 5) Significant weigh loss. 6) Probable protein-caloric malnutrition. 7) Always the possibility of occult cancer in this type of patient.															
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ASSESSMENT SCORE: 5.0		<input type="button" value="Wilson"/> <input type="button" value="Barber"/> <input type="button" value="Mulligan"/>														
Plan P	1) I would like to examine the patient again at the home in a few days to get an idea of how she is in that environment, and what the home is like. If I find that I still feel her care is substandard, I would like to talk again with the patient and her family to discuss options of pursuing improved care at this facility, or finding a better home. 2) Until then, instruct care takers to give prompt attention to patients request for use of the bathroom.															
	<table border="1"> <tr><td>PLAN:</td><td><input type="radio"/>0 <input type="radio"/>1 <input type="radio"/>2 <input type="radio"/>3 <input checked="" type="radio"/>4 <input type="radio"/>5 <input type="radio"/>6 <input type="radio"/>7 <input type="radio"/>8 <input type="radio"/>9</td></tr> </table>			PLAN:	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input checked="" type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9											
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PLAN SCORE: 4.0		<input type="button" value="Wilson"/> <input type="button" value="Barber"/> <input type="button" value="Mulligan"/>														

Neurological Examination

History

Systems Review

Tests

Measures



Examination

- Patient interview
- Level of consciousness
- Cognition function
- Perceptual function
- Speech and communication
- Cranial nerves
- Vital signs
- Sensory function
- Musculoskeletal function
- Coordination
- Motor function
- Balance
- Gait
- Functional status and activity level
- Environment
- Diagnostic Procedures

Patient interview

- Presenting symptoms
- Past medical history
- Social history

Subjective

Level of consciousness

- Orientation
- Level of consciousness

Cognition function

- Memory
- Attention
- Higher level cognitive abilities

Perceptual function

- Agnosia (실인증)
- Visual perception disorders
- Visual-Spatial perception disorders
- Tactile perception disorders
- Motor perception disorders

Speech and communication

- Expressive function
- Receptive function
- **Aphasia (실어증)**
 - Wernicke's Aphasia (sensory aphasia)
 - 감각 실어증
 - 좌측반구 측두엽 후방 1/3 회회예 접하는 부위 (Wernicke area)
 - 유창하게 말하고 억양도 정확함. 하지만, 얘기하고 있는 내용을 스스로 이해하지 못함.
 - Broca's Aphasia (motor aphasia)
 - 하위 전두엽 (Broca area)
 - 말이 유창하지 못하고 발음이 어려움. 조사가 삭제됨. 하지만, 다른 사람의 말은 이해할 수 있음.

(Appendix) Language check

- 말장애: *Dysarthria* (발음 장애), *aphonia* (발성 불가능)
- 언어장애: *aphasia*

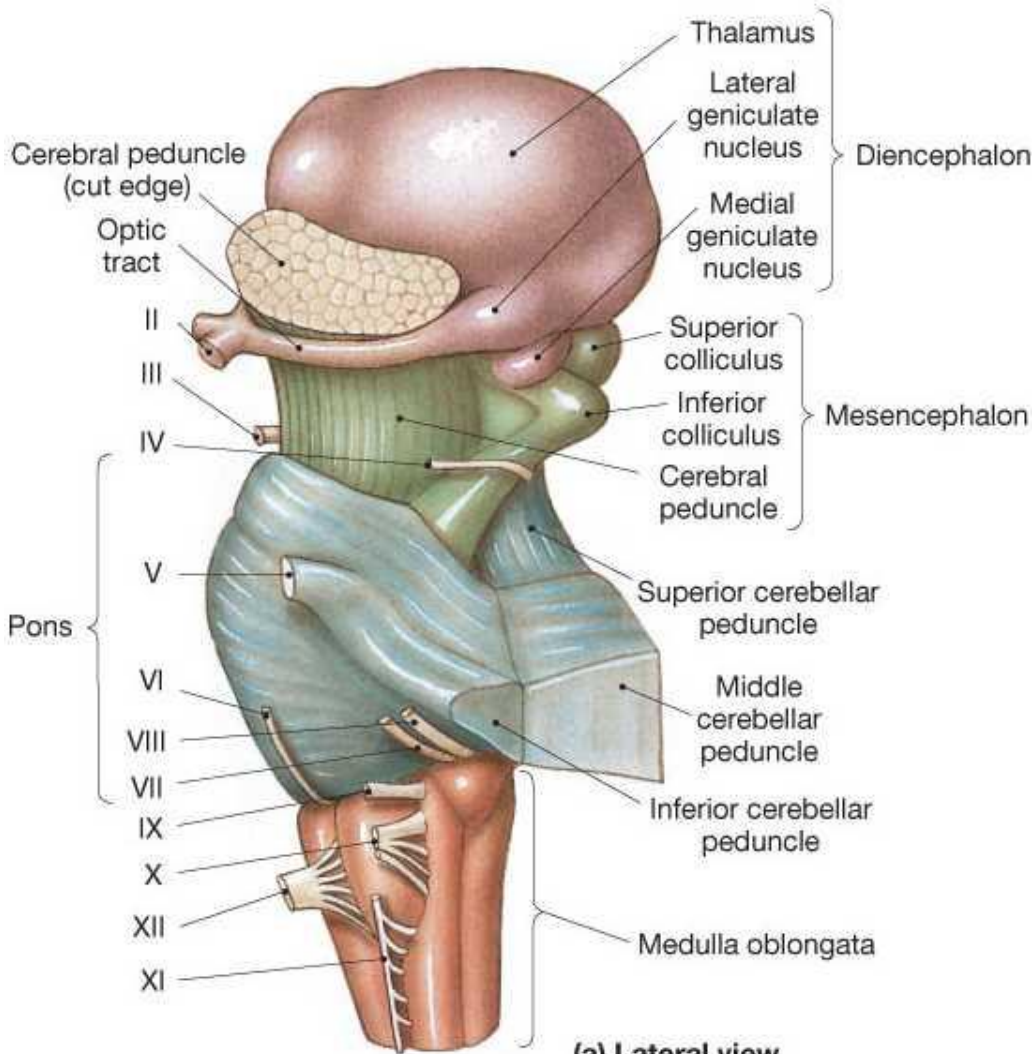
Cranial nerves

- Smell
- Vision
- Pupillary reflexes
- Extraocular movements
- Face & cornea sensory, Masticatory muscle function
- Facial expression
- Vestibular & cochlear function

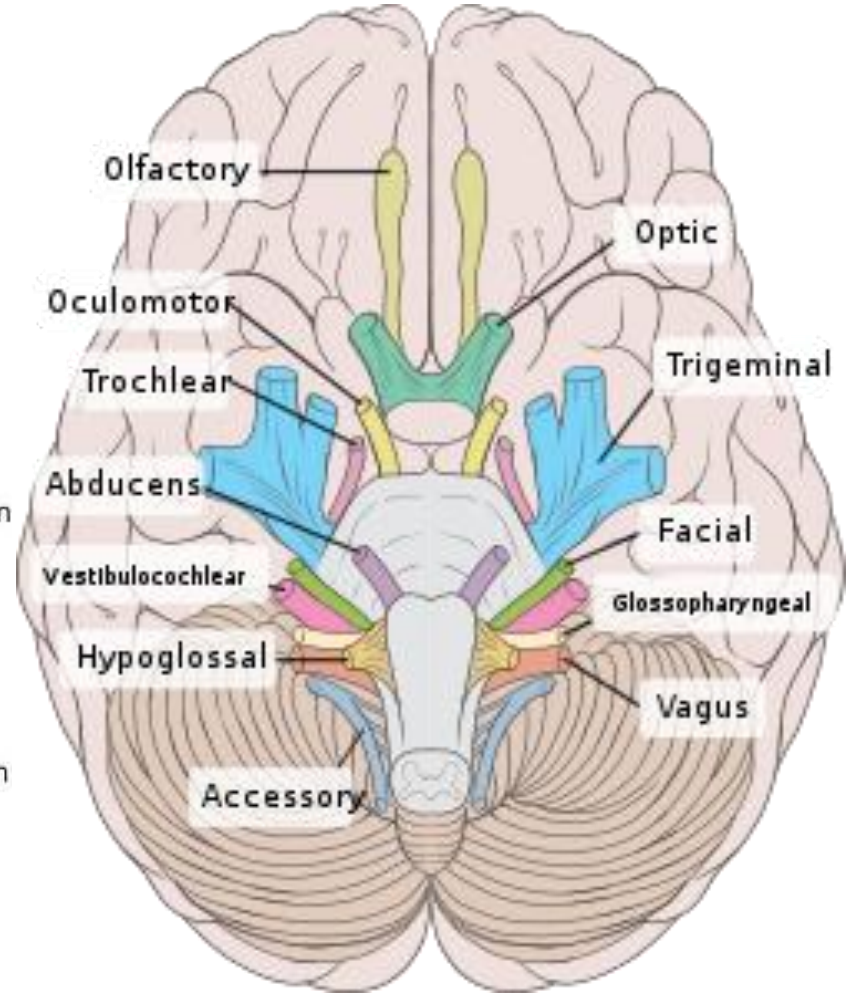
- Phonation (발음) & swallowing
- Palate (입천장), pharynx control & gag reflexes
- Trapezius, SCM muscle function
- Tongue movements

No.	Name	Sensory, motor, or both	Origin/Target	Function
0	Terminal	Purely sensory	Lamina terminalis	Animal research indicates that the terminal nerve is involved in the detection of pheromones . ^[14] <i>[unreliable medical source?]</i> ^[15]
I	Olfactory	Purely sensory	Telencephalon	Transmits the sense of smell from the nasal cavity. ^[16] Located in the olfactory foramina in the cribriform plate of the ethmoid bone .
II	Optic	Sensory	Retinal ganglion cells	Transmits visual signals from the retina of the eye to the brain. ^[17] Located in the optic canal .
III	Oculomotor	Mainly motor	Anterior aspect of Midbrain	Innervates the levator palpebrae superioris , superior rectus , medial rectus , inferior rectus , and inferior oblique , which collectively perform most eye movements. Also innervates the sphincter pupillae and the muscles of the ciliary body. Located in the superior orbital fissure .
IV	Trochlear	motor	Dorsal aspect of Midbrain	Innervates the superior oblique muscle , which depresses, rotates laterally, and intorts the eyeball. Located in the superior orbital fissure .
V	Trigeminal	Both sensory and motor	Pons	Receives sensation from the face and innervates the muscles of mastication . Located in the; superior orbital fissure (ophthalmic nerve - V ₁), foramen rotundum (maxillary nerve - V ₂), foramen ovale (mandibular nerve - V ₃).
VI	Abducens	Mainly motor	Nuclei lying under the floor of the fourth ventricle Pons	Innervates the lateral rectus , which abducts the eye. Located in the superior orbital fissure .

VII	Facial	Both sensory and motor	Pons (cerebellopontine angle) above olive	Provides motor innervation to the muscles of facial expression, posterior belly of the digastric muscle, stylohyoid muscle, and stapedius muscle. Also receives the special sense of taste from the anterior 2/3 of the tongue and provides secretomotor innervation to the salivary glands (except parotid) and the lacrimal gland. Located in and runs through the internal acoustic canal to the facial canal and exits at the stylomastoid foramen.
VIII	Vestibulocochlear (also auditory, ^[18] acoustic, ^[18] or auditory-vestibular)	Mostly sensory	Lateral to CN VII (cerebellopontine angle)	Mediates sensation of sound, rotation, and gravity (essential for balance and movement). More specifically, the vestibular branch carries impulses for equilibrium and the cochlear branch carries impulses for hearing. Located in the internal acoustic canal.
IX	Glossopharyngeal	Both sensory and motor	Medulla	Receives taste from the posterior 1/3 of the tongue, provides secretomotor innervation to the parotid gland, and provides motor innervation to the stylopharyngeus. Some sensation is also relayed to the brain from the palatine tonsils. Located in the jugular foramen. This nerve is involved together with the vagus nerve in the gag reflex.
X	Vagus	Both sensory and motor	Posterolateral sulcus of Medulla	Supplies branchiomotor innervation to most laryngeal and pharyngeal muscles (except the stylopharyngeus, which is innervated by the glossopharyngeal). Also provides parasympathetic fibers to nearly all thoracic and abdominal viscera down to the splenic flexure. Receives the special sense of taste from the epiglottis. A major function: controls muscles for voice and resonance and the soft palate. Symptoms of damage: dysphagia (swallowing problems), velopharyngeal insufficiency. Located in the jugular foramen. This nerve is involved (together with nerve IX) in the pharyngeal reflex or gag reflex.
XI	Accessory Sometimes: cranial accessory spinal accessory	Mainly motor	Cranial and Spinal Roots	Controls the sternocleidomastoid and trapezius muscles, and overlaps with functions of the vagus nerve (CN X). Symptoms of damage: inability to shrug, weak head movement. Located in the jugular foramen.
XII	Hypoglossal	Mainly motor	Medulla	Provides motor innervation to the muscles of the tongue (except for the palatoglossal muscle, which is innervated by the vagus nerve) and other glossal muscles. Important for swallowing (bolus formation) and speech articulation. Passes through the hypoglossal canal.



(a) Lateral view





Glossopharyngeal (IX)
motor:
pharyngeal
musculature

sensory:
posterior part
of tongue,
tonsil, pharynx



A diagram of a cross-shaped structure, likely a mechanical component or a biological structure. It features a central circular component with a dark center, surrounded by four arms extending outwards. The arms are labeled with letters: 'A' at the top, 'B' on the right, 'C' at the bottom, and 'D' on the left. Blue curved lines are drawn around the central component and the arms, possibly indicating a path or a field.

Oculomotor (III)
motor: all eye muscles except those supplied by IV and VI

Diagram illustrating the vestibulocochlear nerve (CN VIII) originating from the inner ear.

sensory:
heart, lungs,
bronchi, trachea,
larynx, pharynx,
gastrointestinal
tract, external ear

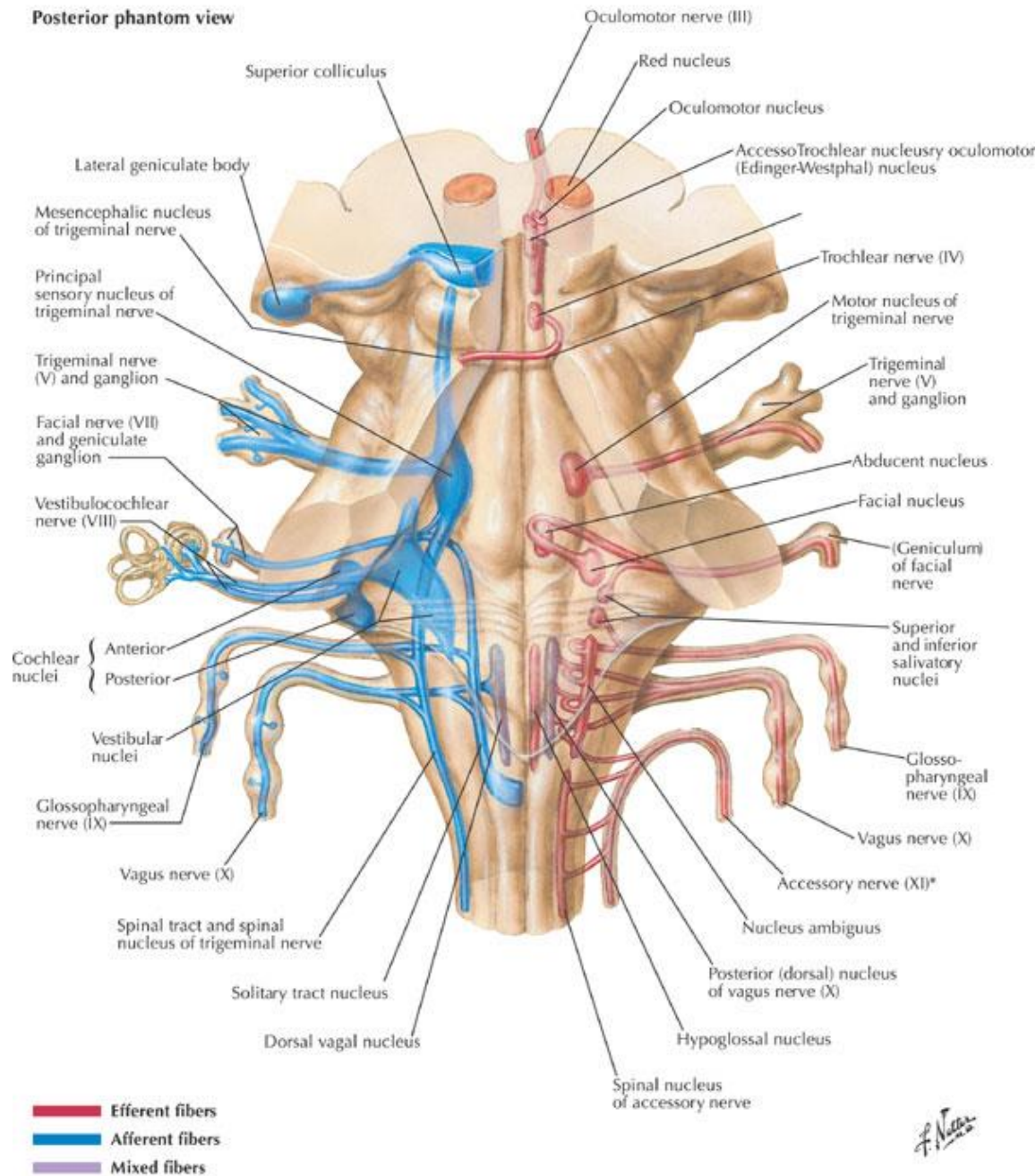
An anatomical illustration of the human head and neck from a lateral perspective. The trapezius muscle is highlighted in red, showing its origin from the occipital bone and its fibers extending downwards and forwards towards the shoulder girdle.



<http://www.britannica.com/EBchecked/media/46720/The-cranial-nerves-and-their-areas-of-innervation>

Cranial Nerve Nuclei in Brainstem: Schema

Posterior phantom view



*Recent evidence suggest that the accessory nerve lacks a cranial root and has no connection to the vagus nerve. Verification of this finding awaits further investigation

Vital signs

- Vital signs
 - To monitor a patient's status at any given time during patient care, and to evaluate basic physiologic responses to treatment
 - Indicators of the body's physiological status and response to physical activity, environmental conditions, and emotional stressors

Consist of Vital signs

- **Primary vital signs**

- Pulse (heart rate) : 맥박
- Blood pressure : 혈압
- Respiration rate : 호흡률
- Temperature : 체온



The
Cardiovascular/pulmon
ary systems review

- **Secondary vital sign**

- Pulse oximetry (PO, 맥박산소측정법)

- 동맥혈의 산소포화도(arterial blood oxygen saturation)의 수준에 대한 정보 측정
- This allow the PT to screen for hypoxemia associated with pulmonary disorders that impair ventilation of the lungs (pneumonia, COPD, anemia, respiratory weakness, & circulatory impairments)
- Respiration/gas exchange and ventilation categories

Vital signs (활력징후)

- HR (Heart rate):
 - 약 70회/분
 - 개인차 큼 (60~100/분)
- BP (Blood pressure):
 - 수축기: 120 ~ 130 mmHg
 - 이완기: 80 mmHg
 - Orthostatic hypotension (기립성 저혈압): 기립 시 BP 감소, 어지러움

Vital signs (활력징후)

- RR (respiratory rate)
 - 14~20회
- Temperature: 36.5 ~ 37.2 C
 - 귀: 36.4 ~ 38 C
 - 구강: 36.1 ~ 37.8 C
 - 겨드랑이: 35.9 ~ 37.6 C
 - 항문: 36.8 ~ 37.5 C

Sensory function

- Superficial sensations
 - Tactile sensation (Light touch / Pressure)
 - Pain (Sharp / Dull / Discrimination)
 - Temperature
- Proprioceptive sensations (Deep sensation)
 - Position sense: 관절의 위치 인지
 - Kinesthesia: 관절이 움직임을 감지
 - Vibration: 진동자극을 인지하는 능력을 평가
- Combined(cortical) sensations
 - Sterognosis: 만져보아서 물체의 모양과 성질을 평가
 - Two-point discrimination: 동시에 피부에 주어진 두 점을 분간하여 식별하는 능력
- Grade
 - Intact / Impaired / Absent

Motor function - 1

- Muscle bulk, firmness
 - Atrophy (위축) / Hypertrophy (비대)
- Muscle tone
 - Spasticity, Rigidity
- Reflexes
- Muscle performance (Musculoskeletal function test)
- Fatigue (피로)
 - Lou Gehrig's disease (루게릭): 근위축성 축삭 경화증
 - Guillian-Barre' syndrome (acute inflammatory demyelinating polyneuropathy; 길리안바레)
 - Multiple Sclerosis (demyelination; 다발성경화증)
 - 위의 질환에는 피로가 중요한 요인

Motor function - 2

- Voluntary movement control
 - 수의적 움직임을 얼마나 잘 조절하는지.
 - 정량화해서 평가하진 못한다.
 - PT가 육안으로 평가해야 함. (질적 평가) 컵 잡을 때 정상적인 패턴으로 잡는지, 움직임 수행 시 불수의적 나오는지 아닌지. Synergy 유발 유무 확인
- Presence of involuntary movement
- Coordination
- Balance
- Gait

Musculoskeletal function

- Anthropometric characteristics (인체 계측)
 - Height, Weight, Leg length
- ROM; AROM, PROM
- Accessory joint motion
 - Joint mobilization
- Muscle performance
 - strength, power, endurance
 - MMT, Biodex, Dynamometer (악력기)
- Special tests
 - 관절마다

Coordination

- Cerebellum test
- Gross motor & fine motor
- Nonequilibrium & equilibrium(balance) test
 - Non-equilibrium: fine motor
 - Equilibrium: Gross motor & Balance

Equilibrium (balance) test

➤ 몸 전체의 자세와 걸음걸이를 보고 평가.

1. Romberg test

- ✓ 눈을 감소 양발을 붙힌 상태로 몸의 균형을 유지하는지 관찰함.
- ✓ 눈을 뜬 상태보다 눈을 감은 상태에서 비틀거림이 심하면 양성 (+)
- ✓ 소뇌 or 전정기관 이상: Motor ataxia (운동실조증), 눈을 감은 상태나 뜬 상태에서 모두 몸을 흔들거림
- ✓ Posterior column 이상 : Sensory ataxia (감각 실조증), 눈을 뜬 상태에서는 잘 서 있으나, 눈을 감은 상태에서 균형을 잡지 못함

2. Tandem walking test

- ✓ 발을 일렬로 하고 걷기 검사
- ✓ 줄 위에서 발가락 앞에 다른 발의 뒤꿈치를 대면서 걷기

Non-Equilibrium test

- 몸의 섬세한 운동을 평가하여 소뇌 기능을 평가함.
- Dysmetria 측정

1. Nose-finger-nose test

2. Knee pat test

- ✓ 앉은 자세에서 무릎에 손등과 손바닥을 교대로 두는 동작을 반복하며 점차 빠르게 실행

3. Heel-knee test

- ✓ 누워서 발목을 발등쪽으로 재깎 채로 발뒤꿈치를 반대편 무릎에서 정강이 발등을 지나 엄지발가락쪽으로 서서히 밀게함.
- ✓ Cerebellum lesion
- ✓ Loss of muscle strength, proprioception
- ✓ Sensorymotor function 정상, 하지만 못하면 이는 ipsi-lateral cerebellum lesion 의심.

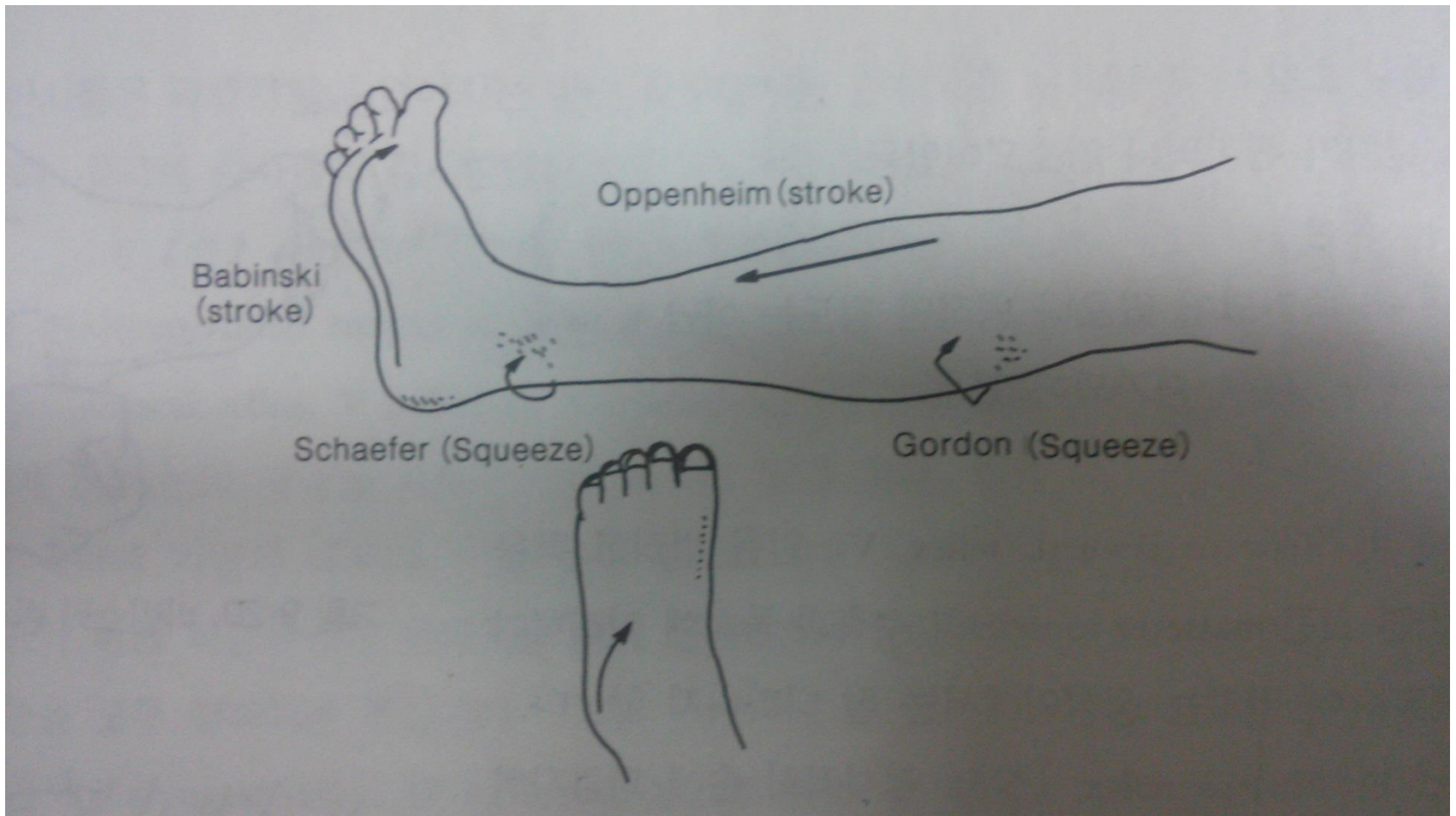
Objective - Reflex

- Reflex
 1. Superficial reflex (표재성 반사)
 2. Deep reflex (심부 반사)
 3. Pathological reflex (병적 반사)
 4. Visceral reflex (내장 반사)
- UMN (upper motor neuron) 이상
 - 1: 약해지거나 사라짐
 - 2: 항진
 - 3: 정상인에서는 볼 수 없으나, 병변 시 나타남

Pathological reflex – Babinski's reflex

- 바로 누운 자세에서 발뒤꿈치 바깥쪽에서 엄지 발가락 아랫부분까지 자극을 가하면 엄지 발가락은 펴지고 나머지는 굽힘되는 양성반응을 보임.
- 증상
 - Normal : 반응 없음
 - Abnormal : UMN 병변 시 나타남. 신생아에서는 나타남
- Cortico-reticulospinal track 의심.
- <http://www.youtube.com/watch?v=kOq5Np0eZ6A>

Pathological reflex



Pathological reflex –Hoffman's reflex

- 검사자는 피검자의 손을 잡고 완전히 근육이 이완된 상태에서 피검자의 손목을 dorsiflexion시키고, 둘째, 셋째 손가락의 손톱을 검사자의 손톱으로 눌렀다가 잡아당기듯이 가볍게 튕기면 엄지손가락과 그 외 손가락이 오므라지듯이 구부러짐
- 증상
 - 음성반응 = 무반응 : Normal
 - <http://www.youtube.com/watch?v=KxA0cT3gWKs>
 - 양성반응 : Abnormal : 중지손톱 압박시 엄지, 시지, 중지 굴곡
 - <http://www.youtube.com/watch?v=QjtiasgMgwY>

Pathological reflex –Ankle clonus reflex

- Supine position에서 무릎을 가볍게 굴곡 시키고 한 손으로 무릎 안쪽을 바치고 다른 한 손은 피검자의 발을 발등쪽으로 밀면 비복근의 계속되는 수축에 의해 간헐적 경련이 일어남.
- 증상
 - 음성반응 = 무반응 : Normal
 - 양성반응 (Abnormal): 비복근의 간헐적 경련이 일어남
 - <http://www.youtube.com/watch?v=kA7GQ8aCYKo>

Balance

- Sensory elements; visual, somatosensory, vestibular, sensory interaction
- Musculoskeletal elements & LOS
- Static balance

Gait

- Kinematic gait analysis
 - 보행 시 움직임 자체의 변화 검사 (보행속도, 거리, 등)
 - 장비: 눈, GaitRite, 동작 분석기
- Kinetic gait analysis
 - 보행의 운동역학적인 검사
 - 보행 시 변화되는 **힘**
 - 장비: EMG
- Physiological energy cost measures

Gait

- Kinematic qualitative gait analysis
 - 눈으로 관찰 (Symmetry, 족압, dragging 등)
- Kinematic quantitative gait analysis
 - 보행 속도, 보행 거리
- Kinetic gait analysis
 - 근력의 변화
- Physiological energy cost measures
 - 에너지 소비

Functional status and activity level

- 우리의 기능을 평가함.
 1. Functional ability (뭔가 하기 위해서 기본적으로 해야 하는 동작)
 - ✓ Sit to stand / Supine to Prone / Rolling over / Quadruped / Standing / Walking / Supine to sit / transfer
 2. ADL
 - ✓ Self-car & Mobility
 3. IADL
 - ✓ 전화사용, 쇼핑, 식사준비, 가옥유지, 세탁, 복약관리 등
- Descriptive parameters
 - 설명해서 평가 (FIM)
- Quantitative parameters
 - 점수화 평가

Functional status and activity level

- Grade

N	3분 이상 자세를 유지시킬 수 있음. 자세를 무너지게 할 경우 평형반응이 나타남.
G	3분 ~ 2분 이상 자세를 유지할 수 있음. 자세를 무너지게 할 경우 보호반응이 나타남.
F	1분 정도 자세를 유지할 수 있음. 자세를 무너지게 할 경우 자세를 유지하지 못해 쓰러짐
P	약간 자세는 만들 수 있으나 오래 유지하지 못하여 쓰러짐
Z	Maximum assist 필요
