

Webinar Edukasi #7

Penanganan Dini Aspek Motorik Pada Kondisi Down Syndrome

Oleh

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Data diri

Nama: Siti Rahmawati

Riwayat Pelatihan:

Pediasuit, Hidroterapi, Pediatric IASTM (Instrument Assisted Soft Tissue Mobilization), PNF (Proprioceptive Neuromuscular Facilitation), Introduction Bobath Pediatric, Kinesiotapping, Infant Massage, MAES (Movement, Analysis, Education, Strategis).

Praktek:

Prana Satya Learning Center (PSLC), Cilandak KKO, Jakarta Selatan.



Materi bahasan:

- Apa itu Down Syndrome??
- Perkembangan dan Problematik Motorik pada Down Syndrome.
- Tata Laksana Fisioterapi pada Down Syndrome.



Apa itu Down Syndrome??

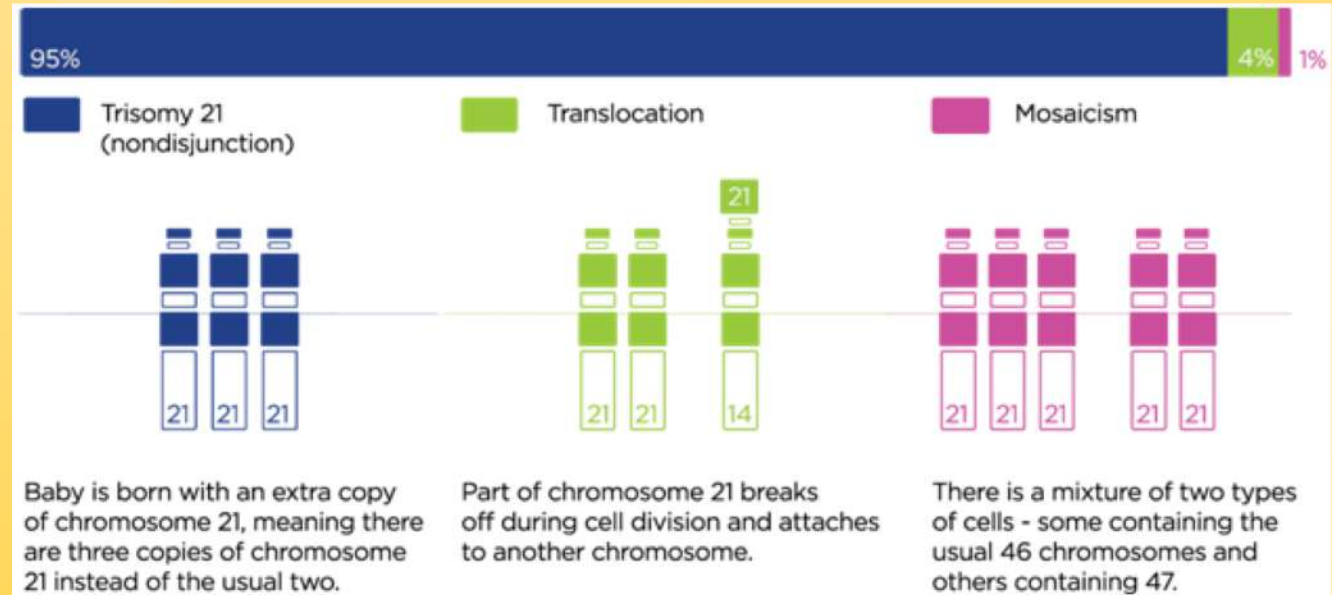
- Definisi dan Tipe
- Histori dan Faktor resiko
- Diagnosa dan Support System

Definisi

Down syndrome occurs when an individual has a full or partial extra copy of chromosome 21.

NDSS (National Down Syndrome Society)

Tipe





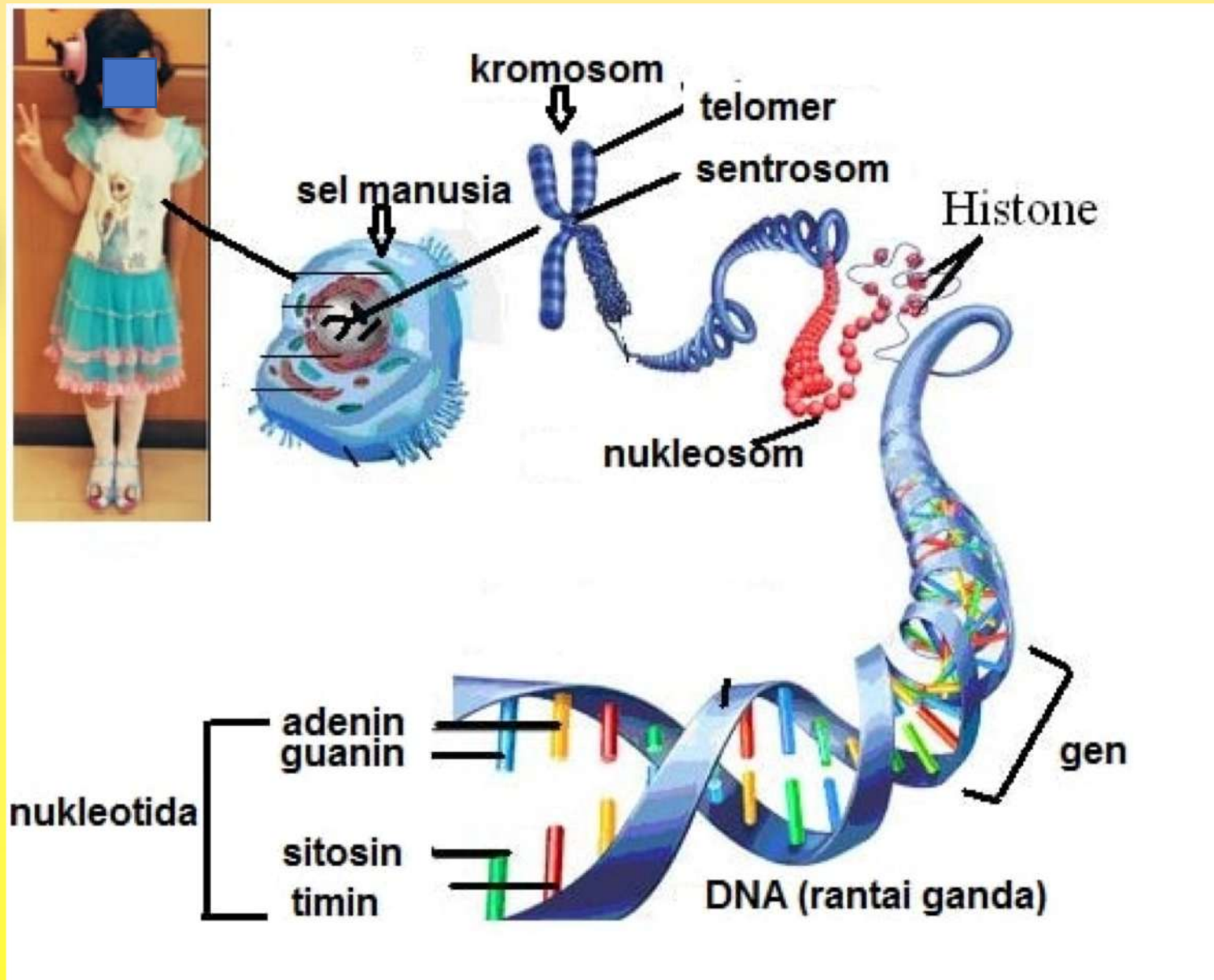
Sejarah dan Faktor resiko

Tahun 1866, dr. John Langdon Down, Inggris.

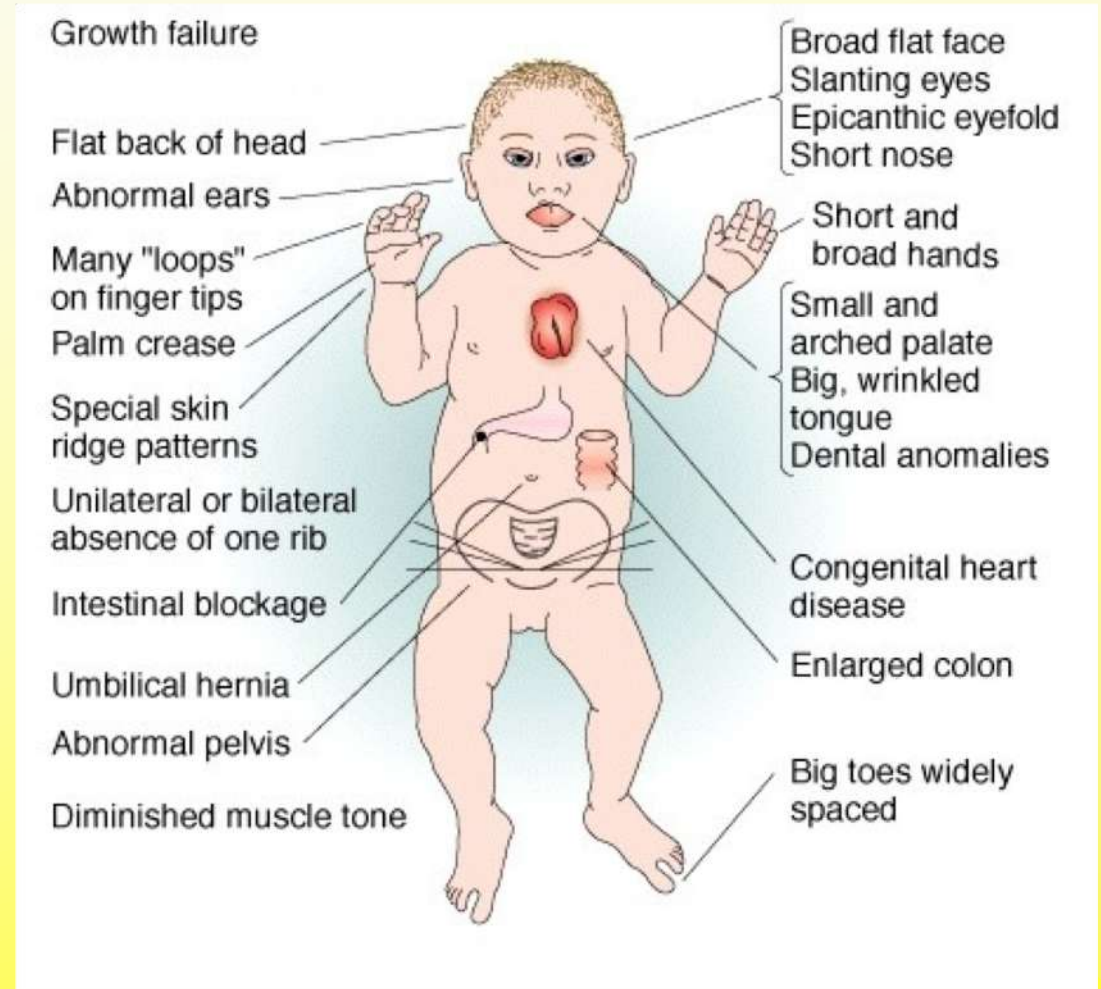
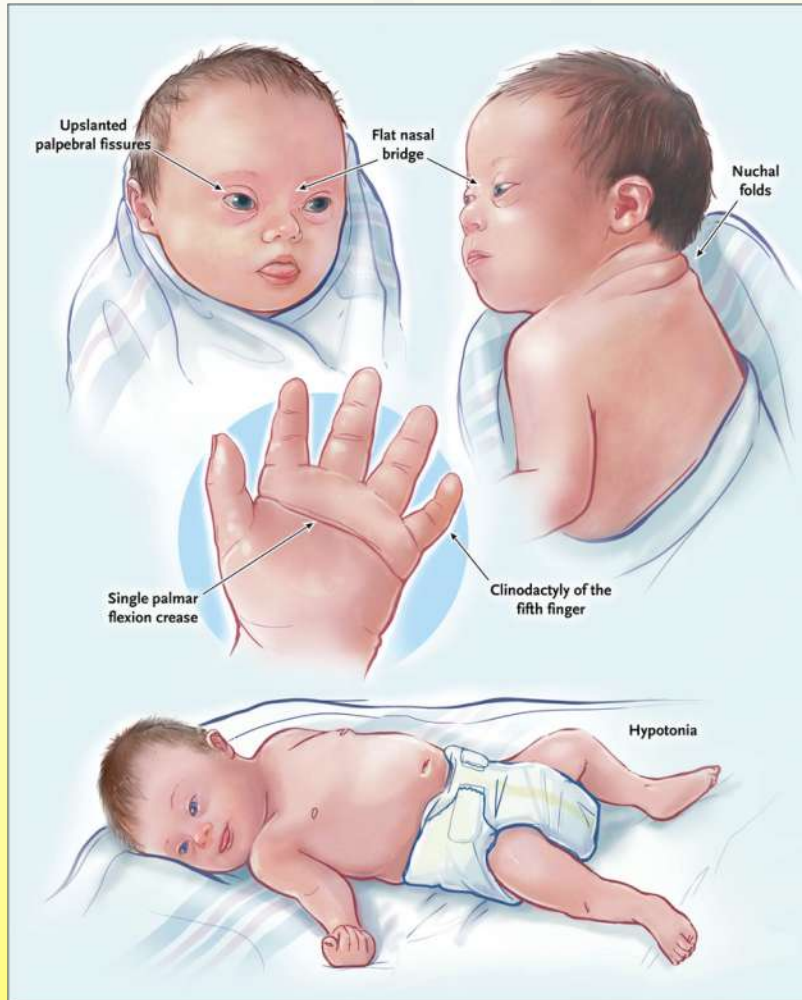
"Maternal age, no definitive scientific research environmental factors or the parents' activities before or during pregnancy"
- NDSS



Tahun 1955,
Joe Hin Tjio,
Kromosom
manusia 23
pasang.



CIRI KHAS Down Syndrome:



Kondisi yang menyertai kondisi DS:

Health Supervision for Children With Down Syndrome

Marilyn J. Bull and the Committee on Genetics

Pediatrics August 2011, 128 (2) 393-406.

Condition	%
Hearing problems	75
Vision problems	60
Cataracts	15
Refractive errors	50
Obstructive sleep apnea	50-75
Otitis media	50-70
Congenital heart disease	40-50
Hypodontia and delayed dental eruption	23

**Pentingnya:
Evaluasi dokter terkait secara berkala!**

Gastrointestinal atresias	12
Thyroid disease	4-18
Seizures	1-13
Hematologic problems	
Anemia	3
Iron deficiency	10
Transient myeloproliferative disorder	10
Leukemia	1
Celiac disease	5
Atlantoaxial instability	1-2
Autism	1
Hirschsprung disease	<1

Down Syndrome dan RA (JIA)

- Autoimmune diseases.
- Down syndrome-associated Arthritis (DA): 8,7 per 1000 anak dengan kondisi DS.

The Arthropathy of Down Syndrome: an underdiagnose and under-recognized condition. *Juj H, Emery H*
J Pediatr. 2009 Feb; 154(2):234-8.

- Inflammatory arthritis: Polyarticular, sering terjadi pada sendi kecil (hands, wrists).
- Dapat terjadi tanpa gejala/keluhan (Asymptomatic) → kerusakan (erosive), melemahkan struktur sendi →

WARNING!!

Diagnosa

- Prenatal (Chorionic Villus Sampling, Amniocentesis).
- Kelahiran (**ciri fisik, gejala klinis** dan pemeriksaan lanjutan **Sitogenetika/Karyotype/FISH test**).

Support System (Tim)

Sesuai problem/gejala yang muncul (Medis dan non-medis).

PENANGANAN DINI (Early intervention)

is a systematic program of therapy, exercises and activities designed to **address developmental delays** that may be experienced by children with Down syndrome or other disabilities.

“The most common early intervention services for babies with Down syndrome are **physical therapy, speech and language therapy, and occupational therapy**”-NDSS

PERKEMBANGAN DAN PROBLEMATIK MOTORIK PADA DOWN SYNDROME USIA DINI

PERKEMBANGAN MOTORIK PADA DOWN SYNDROME USIA DINI

Milestone	Range for Children with Down Syndrome	Typical Range
GROSS MOTOR		
Sits Alone	6 - 30 Months	5 - 9 Months
Crawls	8 - 22 Months	6 - 12 Months
Stands	1 - 3.25 Years	8 - 17 Months
Walks Alone	1 - 4 Years	9 - 18 Months
LANGUAGE		
First Word	1 - 4 Years	1 - 3 Years
Two-Word Phrases	2 - 7.5 Years	15 - 32 Months
SOCIAL/SELF-HELP		
Responsive Smile	1.5 - 5 Months	1 - 3 Months
Finger Feeds	10 - 24 Months	7 - 14 Months
Drinks From Cup Unassisted	12 - 32 Months	9 - 17 Months
Uses Spoon	13 - 39 Months	12 - 20 Months
Bowel Control	2 - 7 Years	16 - 42 Months
Dresses Self Unassisted	3.5 - 8.5 Years	3.25 - 5 Years

<https://www.ndss.org/resources/early-intervention/>



“Children with DS follow **the same sequence** of motor development and generally displayed **double times** of acquisition of developmental milestones compared with healthy children.”

Motor and Cognitive Developmental Profiles in Children With Down Syndrome. **Hyo In Kim, et al.** Ann Rehabil Med 2017;41(1):97-103

PROBLEMATIK MOTORIK PADA DOWN SYNDROME

physical characteristics

Hypotonia

Ligament
laxity

Decreased
strength

Short
arms and
legs

DELAYED DEVELOPMENTAL GROSS MOTOR,
Resiko cedera tinggi

Medical problems

TATA LAKSANA FISIOTERAPI

GOAL/TUJUAN

KOMPENSASI DARI KONDISI FISIK

KOMPONEN PENTING TERKAIT
POSTURAL DAN PERKEMBANGAN
GROSS MOTOR

QUOTE

“The goal of physical therapy is to **minimize** the development of the **compensatory movement patterns** that children with Down syndrome are prone to develop”

(Patricia Winders, 2001, p.1)

Physiotherapy for infants and children with Down syndrome:

1. Muscle strength.
2. Facilitate development, quality of gross motor skills.
3. Provide play-based exercises (at home).
4. Education to parents (area gross motor, prevent secondary injuries, safe environment).
5. Monitor hip, knee and foot alignment – footwear and orthotics.

APA YANG BISA FISIOTERAPIS LAKUKAN?

**Duduk
(optimal
postur)**



Berguling



**Berdiri
(optimal
postur)**

**Berjalan
(optimal
postur)**



Kemampuan Berguling

Penting untuk diketahui:

1. Kelemahan otot area leher-kepala.
2. Joint laxity area Cervical
3. Kelemahan otot perut-punggung
4. Area panggul tidak stabil

vs

Program:

1. Stimulasi gerak dan kontrol leher-kepala (terlentang, tidur miring, tengkurap)
2. Ciptakan interaksi (Ortu), pemilihan mainan (warna, cahaya, suara) untuk **MOTIVASI** dan interaksi terhadap lingkungan.



1



2



3

Kemampuan Duduk

Penting untuk diketahui:

1. Kelemahan otot tubuh (leher-punggung-dada-perut-panggul).
2. Kebiasaan duduk (W sitting atau C shape/round back).

vs

Program:

1. Stimulasi kemampuan duduk dari posisi tidur miring.
2. Stimulasi tumpuan tangan.
3. Stimulasi keseimbangan pada posisi duduk.





Kemampuan Merangkak

Penting untuk diketahui:

1. Kelemahan otot tubuh (leher-punggung-dada-perut-lengan-pangul-tungkai).
2. Unstable area persendian (leher-lengan-tungkai).

vs

Program:

1. Stimulasi kemampuan tumpuan kedua tangan (bertahap □ guling).
2. Stimulasi tumpuan lutut.
3. Pengenalan pola merangkak.









Kemampuan Berdiri

Penting untuk diketahui:

1. Kelemahan otot tubuh (leher-punggung-dada-perut-pangul-tungkai-kaki).
2. Hipermobile sendi (lutut, pergelangan kaki) alignment, deformitas.

vs

Program:

1. Stimulasi kekuatan otot.
2. Penggunaan alat bantu/adaptasi (sepatu, insole, AFO).
3. Positioning (tumpuan kaki, modifikasi lingkungan).
4. Stimulasi keseimbangan berdiri (statik)







Kemampuan Berjalan

Penting untuk diketahui:

1. Kelemahan otot tubuh (leher-punggung-dada-perut-pangul-tungkai-kaki).
2. Hipermobile sendi (lutut, pergelangan kaki).
3. Tumpuan lebar dan tidak stabil.

VS

Program:

1. Penggunaan alat bantu/adaptasi (sepatu, insole, AFO).
2. Mulai dengan merambat lalu "Box to box".
3. Stimulasi keseimbangan (dinamis).
4. Modifikasi lingkungan (safety, ketinggian meja/bangku untuk rambatan).

Effect of Core Stability Exc on Postural Stability in Children with DS

(Sobhy M.Aly & Asmaa A. Abonour. International Journal of Medical Research & Health, 2016,5,10: 213-222)

- Setelah 8 minggu, effective peningkatan postural stability dan balance.
- Core stability exercise menjadi bagian yang penting.



Sensori dan Fungsional gerak

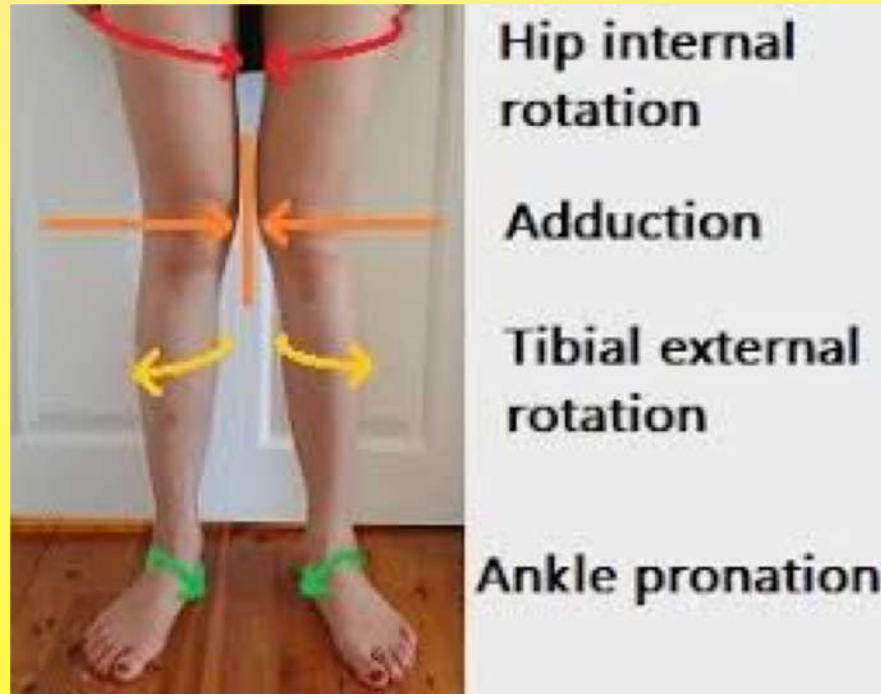


PENTING:
Pilih media **AMAN** dan
AWALI yang disukai anak.

Sensori dan Fungsional gerak



Terkait postur dan foot management



Terkait postur dan foot management



Single-Subject Design Study of 2 Types of Supramalleolar Orthoses for Young Children With Down Syndrome

Janna S. Tamminga, PT, DHS, PCS; et al.

Pediatric of the American Physical Therapy Association, September 2012.

Kondisi DS:

- Penurunan tonus otot dan laxity ligament malalignment, unstable for biomechanical efficiency.
- Usia 0-5 tahun merupakan masa crucial untuk menjaga “proper alignment for bone remodelling”.

Kesimpulan: Sangat penting untuk meningkatkan kemampuan Motorik Kasar

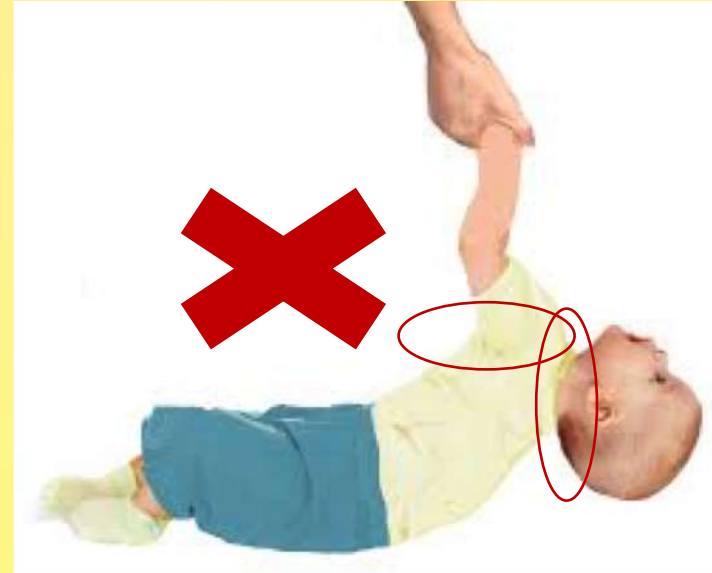


Cascade DAFO



Sure step SMO

Hal yang perlu dihindari/diperhatikan



Pilihan Program Di Prana Satya Learning Center

1. Hidroterapi
2. Program Stimulasi Sensori
3. Yoga for Special Needs
4. Program Oral Motor
5. Program Edukasi
6. Craniosacral Terapi
7. Auditory Therapy



Program teleterapi



Salah satu solusi kekhawatiran Ortu- Pandemi.

T21 Research Society:

“International Study Effect of Covid-19 in people who have DS”

<https://www.t21rs.org/results-from-covid-19-and-down-syndrome-survey/>

Kesimpulan

**Kemampuan
berbeda dan unik**

**Pencapaian Goal
TIM**

**Individu dengan
kondisi DS**

**Stimulasi dan
Intervensi
Konsisten dan
Kontinue**

**Kemandirian
Anak dalam
bergerak**



Pablo Pineda (Spain)



**Stephanie Handojo
(Surabaya)**

Sesi tanya-jawab



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WEBINAR BERIKUTNYA..

PS Learning Center Terapi *PediaSuit*

MENGHADIRKAN WEBINAR EDUKASI #8

KEMAMPUAN MOTORIK PERSIAPAN DI SEKOLAH PADA ANAK KONDISI DOWN SYNDROME.

PEMBICARA :



Fadiya Putri, S.Tr, Ftr
Fisioterapis Anak

Senin, 23 Nov 2020
Jam 15.00-16.00 WIB

Bisa diikuti oleh
pendidik/guru/terapis/orang tua.

WEBINAR
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