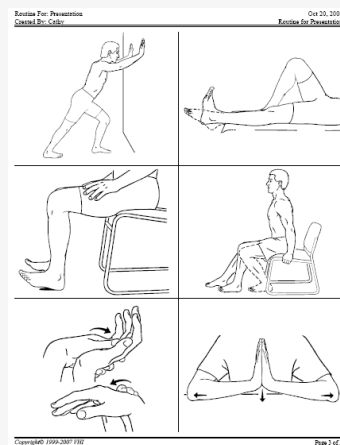
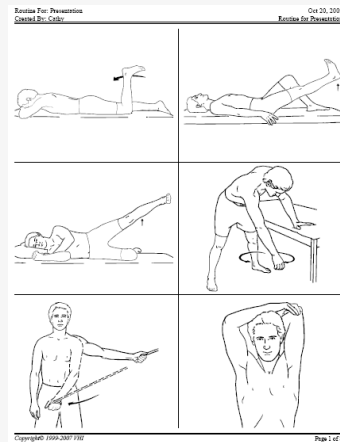
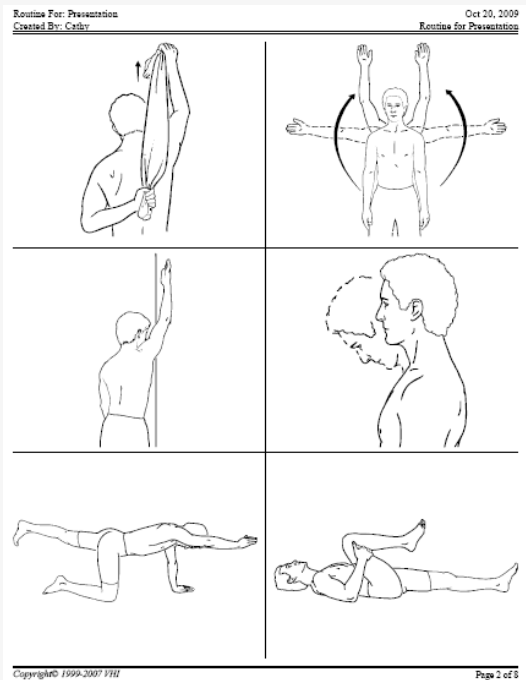


Haapsalu Neuroloogiline Rehabilitatsioonikeskus HNRK – 65 Jubilee Conference

Contemporary Neurodevelopment Therapy (NDT)

**Practical evidence-based approach to
support our clients every-day goals.**

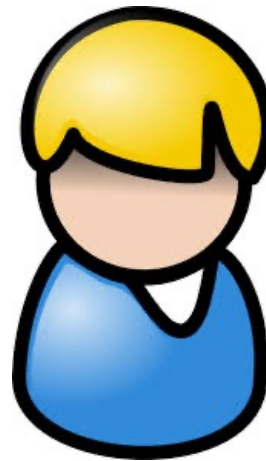
Cathy Hazzard, PT
NDTA™ Coordinator Instructor



We have been providing therapy to make function better, but we haven't always worked in function while doing this...

Therapy has focused on exercise to rehabilitate, especially physiotherapy.

Those stairs
don't go
anywhere...



I thought I told
them I worked in a
doughnut shop,
not a peg factory.



Research tells us what promotes positive neuroplasticity (physiologically) AND creates more opportunities for practice, is finding out what's important to our clients and then setting up the opportunities and environment for them to do this over and over and over again.....

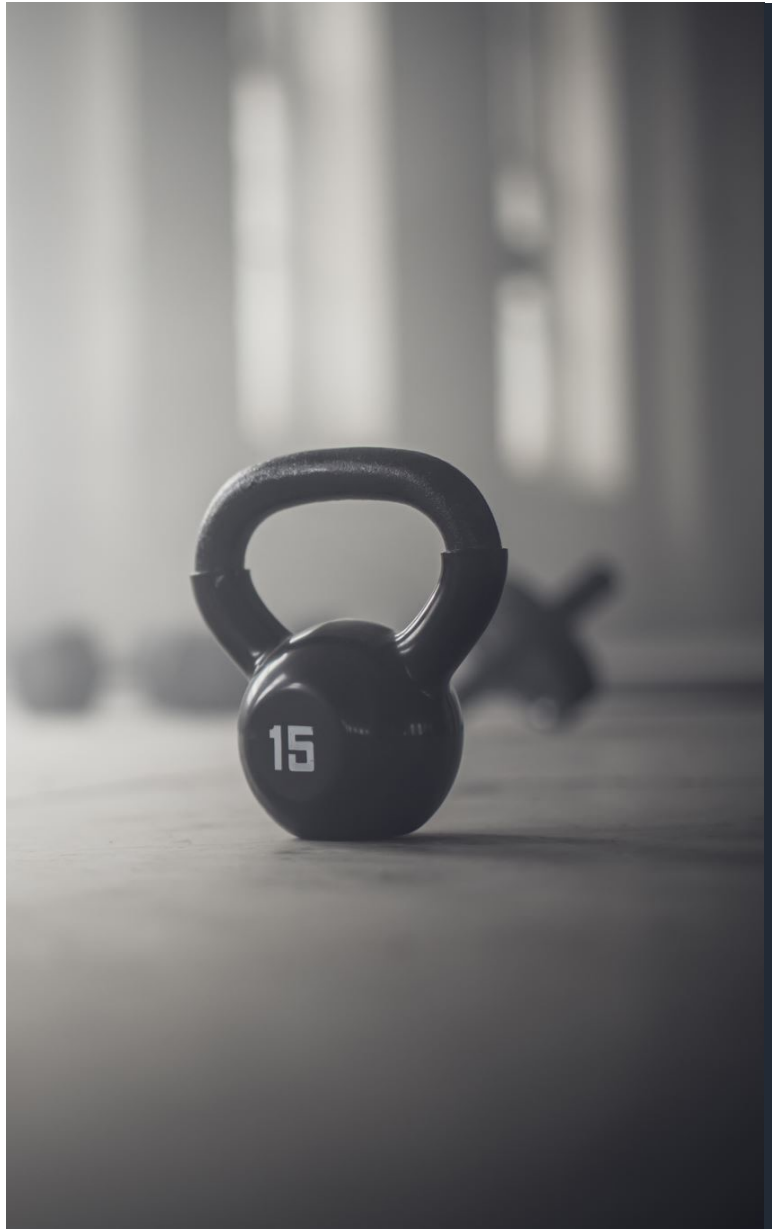




We need to provide skilled practice
in real life environments versus
giving exercise with therapy
objects and tools in sterile
spaces.

&

We need to help our clients set up
practice opportunities in their
homes and in their community
settings.



What's important to our clients?

Is it exercise or is it returning to their every-day life activities?

- Our job is not to count repetitions or create the best exercise program.
- Our job is to set up the best functional, engaging practice program in meaningful, purposeful activities.

A photograph of three spheres of different sizes and colors (grey, light beige, and white) resting on sand dunes. The sand is rippled with wind, creating a textured background. The spheres cast soft shadows on the sand. The quote "We are what we repeatedly do." is overlaid in white text.

“We are what we repeatedly do.”

Aristotle

A yellow dashed line consisting of several short, curved segments, located in the bottom right corner of the image.



Contemporary NDT



Informed by current research on motor control, motor learning, motor development, and neuroplasticity.



Goal referenced, task-specific intervention to achieve the highest functional skill in individually chosen participation level daily skills.



Offers a comprehensive range of treatment strategies including the use of graded specific, verbal, physical, and gestural cues and prompts to address complex task-related postural and movement control and functional motor learning needs.

Chris with bike



C Hazzard, 2023



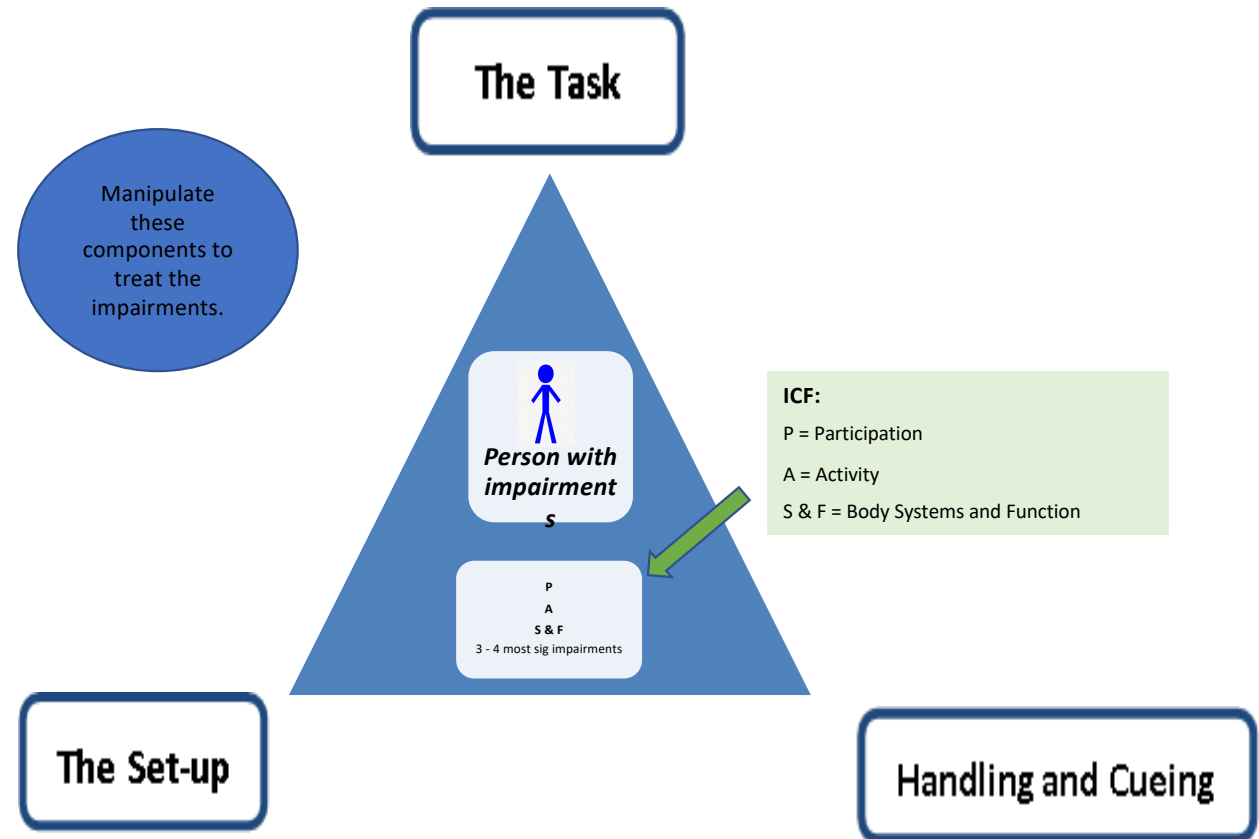
NDT CLINICAL PRACTICE MODEL

- Constant analysis of posture, movement and movement strategies.
- Considers therapeutic handling integral.
- Movement strategies incorporate more involved and less involved extremities.
- Minimize compensatory strategies (i.e., least compensation).
- Promote cortical reorganization by manipulating practice variables – ‘biasing the system’.
- Assess activity limitations and underlying impairments in function/ functional tasks.
- Use a variety of strategies to address various system impairments.

C Hazzard, 2023



The Assessment and Treatment Triad



Movement is
organized
around the
task!





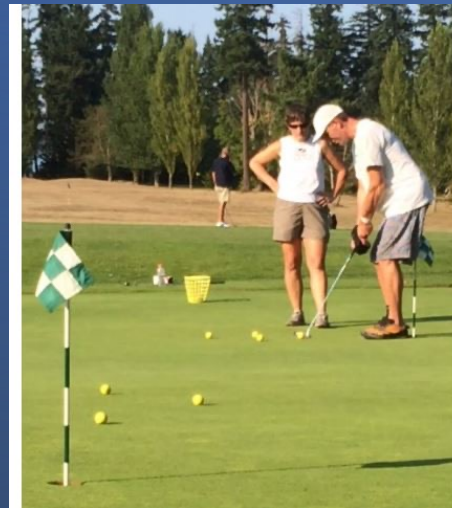
The Task details

What do I mean by the 'task'?

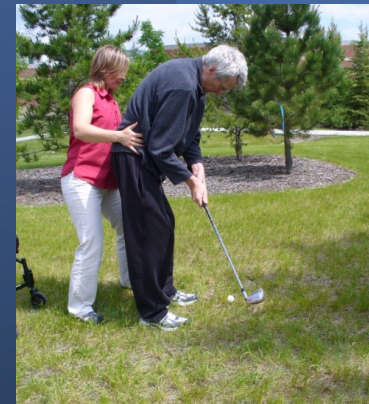
- A task, or sub-task or sub, sub-task that is...
- Salient, motivating to the client....
- To target his/her impairments....
- (Also helps with task specificity practice.)



The Task



Chris putting



The Set-up Details

What do I mean by the Set-up?

1. Position/posture of the:
 - a) Client
 - b) Therapist
 - c) Objects and tools
 - d) Environment
2. For ↑ challenge
3. For task specificity





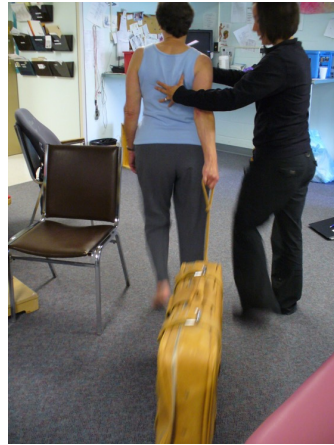
The Set-up

The handling and cueing

What do we mean by handling and cueing?

1. Using your voice, hands, feet, etc. to assess & treat:
 - a) Impairments & client tendencies.
2. To help what you want.
3. To limit/ stop what you don't want.





Why is
handling
integral?



**You'll never get
normal movement
with an abnormal
alignment.**



What is skilled functional retraining/ practice?

The performance of everyday, functional tasks or sub-tasks:

- In a functional, meaningful environment (meaningful to each individual client).
- Within a functional context.
- Requiring the tools/ objects/ equipment of the task and/or function.
- With the guidance of a skilled clinician who knows:
 - What to practice
 - How to practice it and,
 - Why it needs to be practiced (i.e., to target the most significant impairments).



Conditions
necessary to
achieve sustained
functional
improvements
with skilled
practice:

Need:

- ++++++++ repetitions (i.e., ↑ volume).
- Repetition without repetition.
- Repetition with progression.
- Massing of practice.
- To practice real and meaningful activities.





Salience – meaningful to the individual

‘Only behaviourally relevant
experiences will induce plasticity’.

‘The behaviour needs to be
important to the individual’.

Our adult clients will do almost
anything we ask them to do.....
but, should they?







Kayak paddle

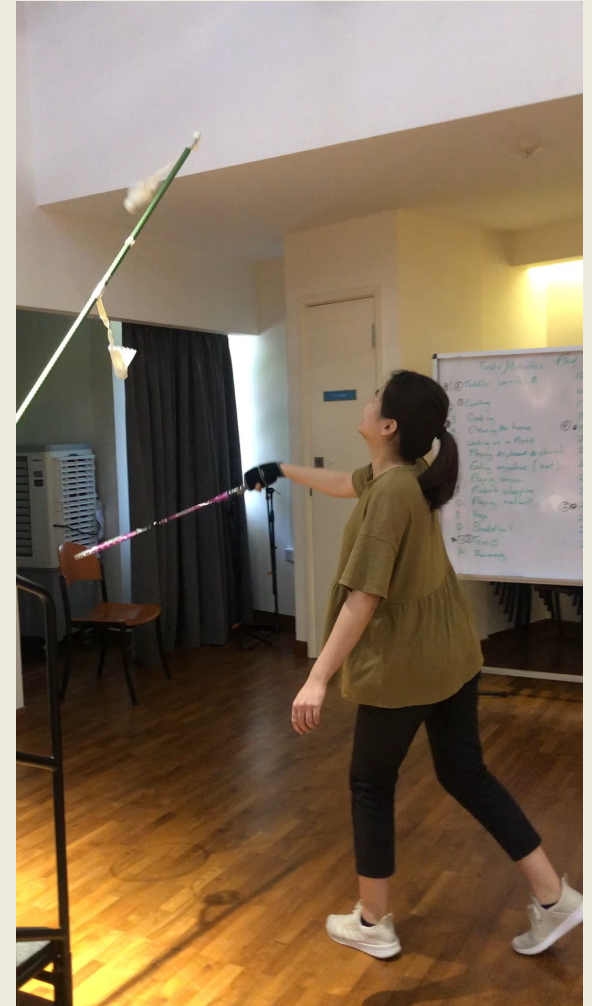


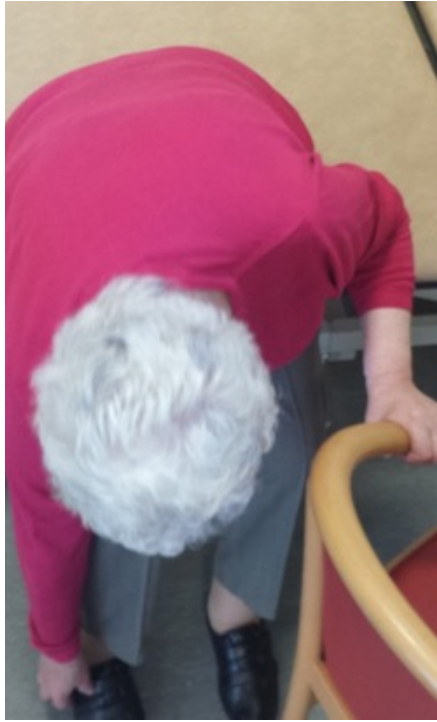
Benefits of working in meaningful tasks

- Typically, multidirectional movements that:
 - Target multiple system impairments at the same time (e.g., sensory, perceptual, cognitive, muscle activation, strength, ROM, etc.).
 - Are at the Participation and Activity levels of the ICF.
- ***Relevant and meaningful to the client.***
- ***Better carryover into real life.***
- ***What the research tells us works!***



C Hazzard, 2023







An actual Outpatient
Therapy Department

We need to
treat our
clients like
we expect
real and
prolonged
recovery

Doug at 11 months
post stroke



Doug at 27 months
post stroke





Questions?