CONNECT-CP Clinician Resource Pack

V1. April 2026

Proudly funded by:

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ABOUT THIS RESOURCE PACK

Purpose

The CONNECT-CP team has developed this resource pack to guide clinicians to further resources that may support their learning and their work with children with neurodevelopmental delays and their families. The listed resources are suggestions only; they are not exhaustive or prescriptive and have not been formally evaluated by Kids Rehab WA or The Kids Research Institute Australia. However, they are sourced from reputable organisations.

Audience and intended use

This resource pack is available on the CONNECT-CP website, which serves as a centralised resource hub for clinicians and families.

Future directions

This resource pack is a work in progress, recognising that both clinicians and families have diverse and evolving information needs. A key goal of the CONNECT-CP program is to better understand what information is most useful to clinicians, families, and communities, including Aboriginal and Torres Strait Islander peoples and those from culturally and linguistically diverse (CALD) backgrounds. This understanding will inform the co-design of meaningful, practical, and relevant resources, developed with and for the people who use them.

Feedback

We welcome your feedback on the content, structure, and usefulness of this resource pack, and invite you to share any other resources you use and find helpful. You can provide feedback via this link (https://redcap.link/connectcp-resource-feedback) or by emailing the CONNECT-CP team directly at connectcp@health.wa.gov.au. Your input will directly inform ongoing development and refinement of this resource pack.

ABOUT CONNECT-CP

CONNECT-CP (***Clinical Research Program to Improve Connection, Access and Translation of Evidence in Cerebral Palsy***) is a project led by Kids Rehab WA, Perth Children's Hospital (PCH) in collaboration with The Kids Research Institute, Curtin University, and Western Australian Country Health Service (WACHS). This project is funded by the Perth Children's Hospital Foundation (PCHF) and the Stan Perron Charitable Foundation (SPCF).

The CONNECT-CP project team comprises medical specialists (including paediatricians and neonatologists), allied health professionals, researchers and academics, rural health and community representatives, and consumer partners, working together across health services and universities. CONNECT-CP aims to detect cerebral palsy (CP) earlier and ensure all children in WA have access to early assessment and support. CONNECT-CP will connect services and equip clinicians with tools to provide timely care for children and families.

GOALS

- **Connect** hospitals, health services, clinicians, and communities across Western Australia
- **Build** local workforce capability
- **Equip clinicians** with specialist tools
- **Equip families** with supportive resources

FOR

Children 0-3 years,
Families,
Clinicians, Researchers

WITH

Collaboration between clinicians, families, researchers, remote and regional communities

KEY STREAMS AND ACTIVITIES

DIGTIAL HEALTH

Develop and deploy a **Digital Tool** for remote assessment using secure video recording & video analysis

Overcome distance barriers

Improve **continuity of care** for patients moving through the state

EDUCATION AND TRAINING

For families

Resources on typical neurodevelopment

Guidance on **early signs of CP & neurodevelopmental delay**

Resources co-designed with metro, remote and regional communities

For clinicians

Training (e.g., in GMA, HINE, CVI)

Tools for ongoing **learning**

Practical resources and clear referral pathways **co-designed with clinicians** to support early assessment and support

NETWORK

Communities of practice connecting clinicians

Engagement and Clinical services (site visits, regional outreach)

WA Clinician survey (confidence, referral pathways, barriers & facilitators to tool use, resources)

Identify areas of support

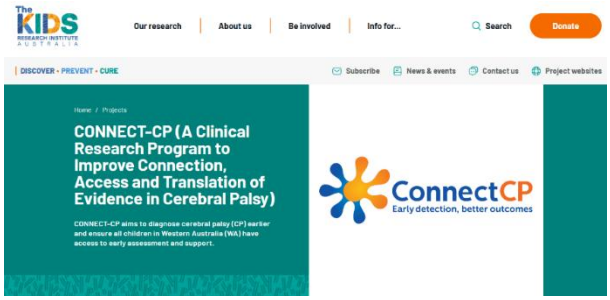
Deliver **evidence-based training**

Evaluate training and impact on translation to practice

Develop, adapt, and share **resources**

Further information about CONNECT-CP and the project team can be found via the links below:

- **Website:** www.thekids.org.au/projects/connect-cp/
  Please note that the website is an ongoing project



- **Media release:**
  https://app.hivo.co/shared/assets/DmPqyFWiKyP6ddizs?k=3%2FyPwW5npU%2FdVPE%2BX3fpmCYrR1%2Bx9RJ0gc1umEKreYg%3D

- **Enquiries:** ConnectCP@health.wa.gov.au

RESOURCES FOR SUPPORITNG INFANT DEVELOPMENT FOR FAMILIES AND CLINICIANS

envisage

Enabling Visions and Growing Expectations

Connect with envisage

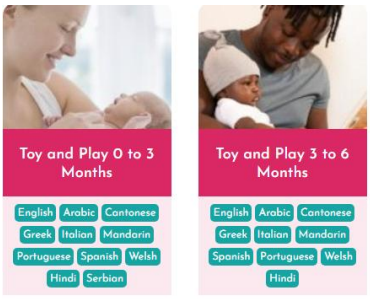
https://envisage.community
envisage.australia
@envisage.community
@envisagenetwork
Envisage Families
envisage@acu.edu.au
+61 07 3861 6079

ENVISAGE Families program is a free peer support program that empowers, supports, and connects parents and caregivers of children aged 0–8 years with disability, autism, or developmental concerns, and is currently fully funded by the Department of Social Services.

ENVISAGE First Peoples is a free culturally safe program, co-created with mob, that supports Aboriginal and/or Torres Strait Islander families and communities raising children with developmental concerns or disability to feel strong and supported.

ENVISAGE Service Provider Program is an adaptation of the ENVISAGE Families program, designed to support health and disability service providers to reflect on and apply contemporary, family-centred, evidence-informed approaches when working with children with developmental concerns or disability and their families.

Free parent program starting 19th May 2026, hosted by Perth Children's Hospital. See ENVISAGE flyer for details



Ei SMART website

Ei SMART is a website that explains a simple, evidence-informed approach to supporting babies who are born early or have developmental challenges. It contains free, accessible and visually appealing resources for parents and professionals to support child development.

https://eismart.co.uk/resources/

WHAT IS CEREBRAL PALSY

"Cerebral palsy is a heterogeneous neurodevelopmental condition beginning in early life, caused by a non- degenerative brain disturbance that affects motor abilities and often other aspects of functioning across the lifespan." (Danet al., 2026).

- CP is a lifelong condition affecting movement, coordination, muscle tone, and posture.
- CP occurs when parts of the brain that control movement do not develop as expected or are injured before, during, or shortly after birth.
- CP presents in different ways, ranging from mild motor difficulties to more significant physical impairment. A person may be affected on one side of their body, in their lower limbs, or their whole body.
- While CP is primarily a motor condition, individuals may also experience associated non-motor difficulties, such as communication and learning difficulties, epilepsy, pain, fatigue, sleep and feeding challenges, sensory impairments (such as visual difficulties) and behavioural or emotional challenges, often requiring multidisciplinary support.
- In the past, CP was often not diagnosed until a child was 12–24 months old. Today, CP can be identified as early as three months of age (in infants with newborn detectable risks).
- Early diagnosis enables timely access to support during a critical period of brain development, which can significantly improve outcomes. While there is no cure, early and ongoing support can help individuals to reach their full potential.

References:
Dan, B., Rosenbaum, P., Carr, L., Gough, M., Coughlan, J., & Nweke, N. (2026). Updated description of cerebral palsy. *Developmental Medicine & Child Neurology, 68*(4), 465–476. https://doi.org/10.1111/dmcn.70149
https://cerebralpalsy.org.au/wp-content/uploads/2023/06/CPA44_EarlyDiagnosisGuide_LR-1.pdf
https://www.pregnancybirthbaby.org.au/cerebral-palsy#what-is
https://www.mycpguide.org.au/info-resources/assessment-and-diagnosis/introduction-to-assessment-and-diagnosis-0-6-years-old
https://www.childrens.health.qld.gov.au/__data/assets/pdf_file/0024/167505/cerebral-palsy-a-guide-for-parents-and-caregivers.pdf

CEREBRAL PALSY RESOURCES FOR CLINICIANS

General Information on CP

CPAdvance training (Cerebral Palsy Alliance)

CPAdvance™ is a new online training program that helps health professionals learn the latest, best-practice ways to support babies and young children with CP as early as possible.

https://cpadvance.org/

What is CP video series (Cerebral Palsy Alliance)

The videos explain, in clear and accessible language, what CP is, how it affects people, and the different types and supports available, using real stories from people with lived experience.

https://cerebralpalsy.org.au/cerebral-palsy/#videos

Oceania Academy of Cerebral Palsy and other Childhood-onset Disabilities

Cerebral palsy for General Practitioners: Fact sheets (Oceana Academy)

These fact sheets are designed to support general practitioners by providing clear, practical information on CP, including diagnosis, management, referral pathways, and lifelong care needs, to help improve healthcare for people with CP.

https://www.oceaniaacademy.org/resource/cerebral-palsy-for-general-practitioners-fact-sheets/

myCP Guide

"My CP Guide" website

My CP Guide is a comprehensive online resource hub of credible information collected, reviewed and assessed by experts, relevant to all experiences of CP.

https://www.mycpguide.org.au/

Early conversations: A message from parents for health professionals. (Cerebral Palsy Alliance)

This short video shares families' experiences of early conversations about CP to help health professionals reflect on how these discussions can better support families now and in the future.

https://www.youtube.com/watch?v=dPd_S9kLRaE

CP early detection guidelines

Early detection of cerebral palsy care pathway summary

(AACPDM)

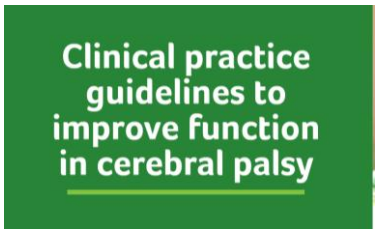
This document by the American Academy for Cerebral Palsy and Developmental Medicine summarises the evidence-based recommendations for early detection of CP.

https://www.aacpdm.org/UserFiles/file/care-pathways-early-diagnosis-print.pdf?062420

Novak et al., (2017) publication: Early, accurate diagnosis and early intervention in cerebral palsy (JAMA Paediatrics)

Published evidence-based international clinical practice recommendations for the early detection and diagnosis of children at risk of CP.

https://doi.org/10.1001/jamapediatrics.2017.1689



Clinical practice guidelines (Cerebral Palsy Alliance)

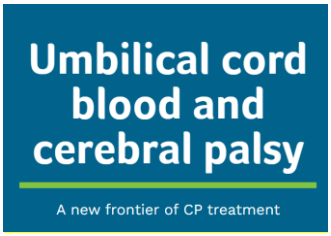
These guidelines have been developed to support children and young people with CP to achieve their goals. It includes information sheets that summarise the guideline recommendations for clinicians and families.

https://cerebralpalsy.org.au/cerebral-palsy/guidelines-to-improve-function-in-cerebral-palsy/

A systematic review of cell therapy modalities and outcomes in cerebral palsy (Akat, A., Karaöz, E.)

This article reviews and synthesises research on the safety and effectiveness of cell therapy approaches for cerebral palsy.

Akat, A., & Karaöz, E. (2025). A systematic review of cell therapy modalities and outcomes in cerebral palsy. *Molecular and Cellular Biochemistry*, *480*(2), 891-922. https://doi.org/10.1007/s1101



Umbilical cord blood and cerebral palsy (Cerebral Palsy Alliance)

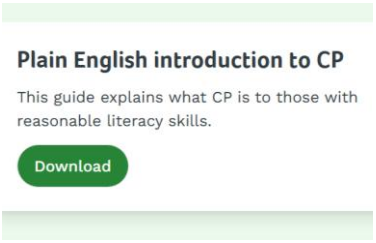
The webpage explains what umbilical cord blood treatment is and why it is being explored as a potential therapy for children with cerebral palsy. It includes fact sheets for families and clinicians.

https://cerebralpalsy.org.au/advocacy/umbilical-cord-blood/

What is CP video series (Cerebral Palsy Alliance)

The videos explain, in clear and accessible language, what CP is, how it affects people, and the different types and supports available, using real stories from people with lived experience.

https://cerebralpalsy.org.au/cerebral-palsy/#videos



Easy English & plain English guides (Cerebral Palsy Alliance)

Short guides in Easy English and Plain English to make information about CP accessible.

https://cerebralpalsy.org.au/cerebral-palsy/#videos

myCP Guide

"My CP Guide" website

My CP Guide is a comprehensive online resource hub of credible information collected, reviewed and assessed by experts, relevant to all experiences of CP.

https://www.mycpguide.org.au/

Cerebral palsy treatment guides (Cerebral Palsy Alliance)

Downloadable booklets for parents, carers and allied health professionals. Organised into age groups and provide information about needs at various stages of development.

https://cerebralpalsy.org.au/cerebral-palsy/treatments/

Cerebral Palsy Resource
Brought to you by Cerebral Palsy Foundation

A Guide to decision making for CP treatment and therapies (Cerebral Palsy Foundation)

This guide helps families and people with CP think through treatment and therapy options and make informed decisions.

https://cpresource.org/topic/treatment-options/considering-alternatives-guide-decision-making-cerebral-palsy-treatments

Cerebral Palsy Research Network

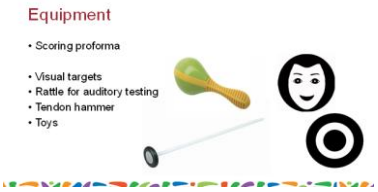
Toolkits (Cerebral Palsy Research Network)

These toolkits are designed to help people understand CP and find practical, everyday support. They benefit people with CP, families and carers, and health professionals by offering clear information and easy-to-use guides across the lifespan.

https://cprn.org/our-toolkits/

HAMMERSMITH INFANT NEONATAL EXAMINATION (HINE) RESOURCES

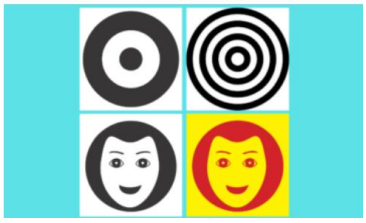
Practical resources for conducting the HINE



HINE equipment checklist and tip Sheet (CONNECT-CP)

A checklist of the equipment needed, and practical tips for administration and scoring of the HINE.

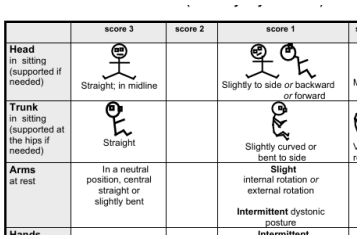
See Appendix A



Visual targets for newborns and young infants (Mac Keith Press)

Downloadable Visual Targets together with detailed information on how to perform the examinations.

https://www.mackeith.co.uk/hammersmith-neurological-examinations/hammersmith-neurological-examinations-subscriber-content/visual-targets-for-newborns-and-young-infants/

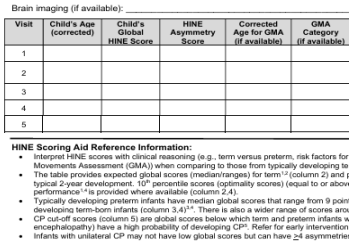


	score 3	score 2	score 1
Head in sitting (supported if needed)	Straight; in midline		Slightly to side or backward or forward
Trunk in sitting (supported at the hips if needed)	Straight		Slightly curved or bent to side
Arms at rest	In a neutral position, central straight or slightly bent		**Slight** internal rotation or external rotation **Intermittent** dystonic posture

HINE proforma (Mac Keith Press)

Here you will find the latest versions of HINE Recording and Scoring Proformas, alone with the guidance notes for completion of the proforma.

https://www.mackeith.co.uk/hammersmith-neurological-examinations/hammersmith-neurological-examinations-subscriber-content/recording-and-scoring-proformas/



Brain imaging (if available): _____

Visit	Child's Age (corrected)	Child's Global HINE Score	HINE Asymmetry Score	Corrected Age for GMA (if available)	GMA Category (if available)
1					
2					
3					
4					
5					

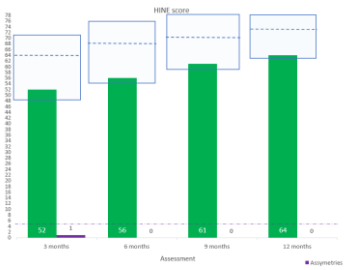
HINE Scoring Aid Reference Information:

- Interpret HINE scores with clinical reasoning (e.g., term versus preterm, risk factors for
- The table provides expected global scores (median/ranges) for term[1,2] (column 2) and
- Typically developing preterm infants have median global scores that range from 9 poin
- CP cut-off scores (column 5) are global scores below which term and preterm infants w
- Infants with unilateral CP may not have low global scores but can have ≥4 asymmetrie

HINE scoring aid (Mac Keith Press)

Here you will find links to view and download the HINE Scoring Aid proformas

https://www.mackeith.co.uk/hammersmith-neurological-examinations/hammersmith-neurological-examinations-subscriber-content/hine-scoring-aid-english-and-translations/



HINE grapher – Excel (University of QLD)

Excel-based clinical tool designed to visually plot and track scores from the HINE.

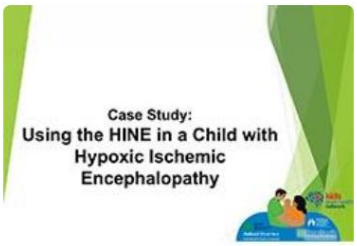
Williams S. HINE Grapher [Excel spreadsheet]. Queensland Cerebral Palsy and Rehabilitation Research Centre, University of Queensland. Available at: https://qcprrc.centre.uq.edu.au/files/2216/HINE%20Grapher.xlsx

Resources for further learning (HINE)

Official HINE teaching videos (Mac Keith Press)

Official HINE teaching videos (incl. Francis Kowan teaching video) which show in detail how to perform and score the HINE. These videos are accessible to registered subscribers only.

https://www.mackeith.co.uk/hammersmith-neurological-examinations/hammersmith-neurological-examinations-subscriber-content/teaching-videos-subscribers-only/



Case studies (Holland Bloorview)

The case studies are designed to demonstrate how the HINE is used in real clinical situations to support early detection of CP and guide timely referrals and support.

https://hollandbloorview.ca/our-services/programs-services/neuromotor-services/hammersmith-infant-neurological-examination-hine

HINE scoring examples (Holland Bloorview)

The scoring examples are intended to help clinicians score HINE items by providing visual, real-world examples of what different scores look like in practice. They include real photographic examples that correspond to the original stick-figure drawings.

https://hollandbloorview.ca/our-services/programs-services/neuromotor-services/hammersmith-infant-neurological-examination-hine

CEREBRAL VISUAL IMPAIRMENT (CVI) RESOURCES

CVI is a visual impairment caused by damage to the brain's visual pathways and affects how visual information is processed. CVI is frequently seen in children with neurodevelopmental disorders including CP. CVI is best understood as a spectrum, as it affects individuals in different ways and to varying degrees.

Given that CVI is a form of vision impairment that originates in the brain, routine eye examination may be normal. CVI may be identified in the first weeks /months of life, e.g., an infant showing no or poor visual responses, or present later in childhood e.g., a child showing difficulties with visual tasks in everyday situations or struggling at school. Early identification in infants is critical for achieving optimal vision and developmental outcomes. Later in childhood, in high-risk children, targeted questions can be an important first step in identifying concerns and connecting individuals with appropriate referrals for in-depth testing and support.

Cerebral Visual Impairment - screening assessment (Child and Adolescent Health Service)

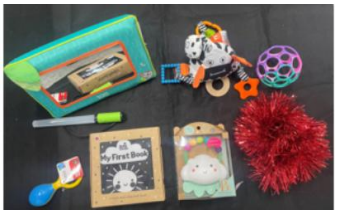
Copy of the CAHS CVI Screener. Developed by the Kids Rehab WA team, Perth Children's Hospital (Associate Professor Alison Salt & Natalie Cavallo).

See Appendix B

Cerebral Visual Impairment-screening instructions (Child and Adolescent Health Service)

A checklist of the equipment and practical tips for administration and scoring of the CVI Screener. Developed by the Kids Rehab WA team, Perth Children's Hospital.

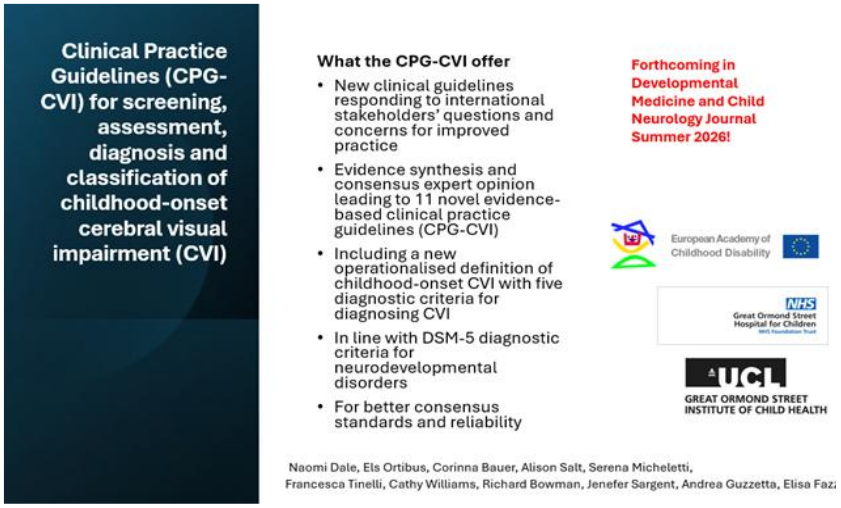
See Appendix C



Vision resource kits & ideas to encourage use of vision (Child and Adolescent Health Service)

Examples of items and strategies that can be used to encourage visual development. Developed by the Kids Rehab WA team, Perth Children's Hospital.

See Appendix D



COMING SOON!

Will be included in future versions of the resource pack

Near Detection Scale- resource checklist, scoring and administration instructions (Sonksen et al 1991; Salt et al, 2020).

A functional vision assessment tool used to measure an infant's ability to detect the presence of a visual target at near distance.

See Appendix E & Appendix F

REFERENCES

HINE Course References

Cioni, G. (2007). Neurological assessment in the first two years of life. Mac Keith Press.

Haataja, L., Cowan, F., Mercuri, E., Bassi, L., Guzzetta, A., & Dubowitz, L. (2003). Application of a scorable neurologic examination in healthy term infants aged 3 to 8 months. *Journal of Pediatrics, 143*(4), 546. https://doi.org/10.1067/S0022-3476(03)00393-7

Haataja, L., Mercuri, E., Regev, R., et al. (1999). Optimality score for the neurologic examination of the infant at 12 and 18 months of age. *Journal of Pediatrics, 135*(2), 153–161. https://doi.org/10.1016/S0022-3476(99)70016-8

Hay, K., Nelin, M., Carey, H., Chorna, O., Moore-Clingenpeel, M. A., & Maitre, N. (2018). Hammersmith Infant Neurological Examination asymmetry score distinguishes hemiplegic cerebral palsy from typical development. *Pediatric Neurology, 87*, 70–74. https://doi.org/10.1016/j.pediatrneurol.2018.07.002

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Ricci, D., Cowan, F., Pane, M., Gallini, F., Luciano, R., Baranello, G., et al. (2008). Neurological examination at 3 to 12 months in infants with cystic periventricular leukomalacia: Prognostic value for motor outcome at 2 years of age. *Developmental Medicine & Child Neurology, 50*(3), 187–191. https://doi.org/10.1111/j.1469-8749.2007.02020

Romeo, D. M., Cioni, M., Scoto, M., Mazzone, L., Palermo, F., & Romeo, M. G. (2008). Neuromotor development in infants with cerebral palsy investigated by the Hammersmith Infant Neurological Examination during the first year of age. *European Journal of Paediatric Neurology, 12*, 24–31. https://doi.org/10.1016/j.ejpn.2007.05.006

Romeo, D. M., Cioni, M., Scoto, M., Pizzardi, A., Romeo, M. G., & Guzzetta, A. (2009). Prognostic value of a scorable neurological examination from 3 to 12 months post-term age in very preterm infants: A longitudinal study. *Early Human Development, 85*(6) 405–408. https://doi.org/10.1016/j.earlhumdev.2009.01.004

Romeo, D. M., Cowan, F. M., Haataja, L., et al. (2021). Hammersmith Infant Neurological Examination for infants born preterm: Predicting outcomes other than cerebral palsy. *Developmental Medicine & Child Neurology, 63*(8), 947–953. https://doi.org/10.1111/dmcn.14768

Romeo, D. M., Cowan, F. M., Haataja, L., et al. (2022). Hammersmith Infant Neurological Examination in infants born at term: Predicting outcomes other than cerebral palsy. *Developmental Medicine & Child Neurology, 64*(7), 871–880. https://doi.org/10.1111/dmcn.15191

Romeo, D. M., Ricci, D., Brogna, C., & Mercuri, E. (2016). Use of the Hammersmith Infant Neurological Examination in infants with cerebral palsy: A critical review of the literature. *Developmental Medicine & Child Neurology, 58*(3), 240–245. https://doi.org/10.1111/dmcn.12876

Romeo, D. M., Velli, C., Sini, F., Pede, E., Cicala, G., Cowan, F. M., et al. (2024). Neurological assessment tool for screening infants during the first year after birth: The brief Hammersmith Infant Neurological Examination. *Developmental Medicine & Child Neurology, 66*(9), 1173–1180. https://doi.org/10.1111/dmcn.15871

Uusitalo, K., Haataja, L., Nyman, A., Lehtonen, T., & Setänen, S. (2021). Hammersmith Infant Neurological Examination and long-term cognitive outcome in children born very preterm. *Developmental Medicine & Child Neurology, 63*(8), 947–953. https://doi.org/10.1111/dmcn.14873

APPENDIX A: HINE equipment checklist and tip sheet

ConnectCP
Early detection, better outcomes

HINE Equipment Checklist

☐ **HINE Scoring Proforma**
The guidance notes provide detailed information on scoring each item of the HINE proforma


☐ **Visual Targets**
To check the child's eye movements. Alternatively, you can use a high contrast toy, or your own face



☐ **Rattle**
For auditory testing. Alternative sounds can be used (e.g. hand clapping) provided they are not harsh or sharp

☐ **Tendon Hammer**
For reflex testing

☐ **Measuring Tape**
For head circumference

☐ **Toys**
To help maintain the child's engagement throughout the assessment


HINE Practical Tips

ADMINISTRATION

Place infant safely on the floor or parent lap if needed

You want to see as much of the infant's body as possible

Parents can assist with supporting the infant

Provide support, as needed, for younger or physically challenged infants

Ensure the child isn't visually distracted by toys or people

Don't over score out of sympathy

SCORING

Items can be administered in any order

Circle the appropriate picture

If there are two drawings in a box, circle the one closest to what you observe

Mark across the vertical line if a response falls between two options (1/2 mark)

If unsure about a response, repeat and comment, but commit

Record descriptive comments

APPENDIX B: Cerebral Visual Impairment – screening assessment

Cerebral Visual Impairment - screening assessment

If YES to parent concern, roving eye movements, squint or NO to any other question, refer to OT for assessment

Date: Age/CGA:

Screening assessment completed by:

Has the child been referred to Ophthalmology? Yes No Date referred:

Has the child been assessed by Ophthalmology? Yes No Date assessed:

Medical record number:

Surname:

Forename:

Gender: D.O.B

	Resource required	Yes/No	Describe / Comments:
Parental concern about vision? *(describe specific concerns)*		Y N	
Does the child have roving eye movements or nystagmus?		Y N	
Does the child have a squint? *(intermittent after 8 weeks or constant)*		Y N	
Can the child fix on face (**parent's or assessor's)** at ≈ 30cm? *If NO at 4 weeks repeat at 6 weeks*		Y N	
Can the child fix on a black and white target at ≈ 30 cm?		Y N	
Can the child follow into the left and right visual field? *(horizontal following)*		Y N	
Can the child fix and follow on a dangling 6cm yellow ball at ≈ 30 cm? *Complete if child >8 weeks CA*		Y N	

NB: To be completed no sooner than 4 weeks post-term age. Ideal age is from 6 weeks post-term age.

Developed by the Kids Rehab WA team at Perth Children's Hospital

APPENDIX C: Cerebral Vision Impairment - screening instructions

Cerebral Vision Impairment – screening instructions

Who can conduct CVI screening?

CVI screening can be conducted by any allied health clinician and is designed to be conducted during first face to face contact, to support early detection and identification of vision concerns.

Timing of CVI screening

- Best conducted from **6 weeks corrected gestational age (CGA)**.
- Must be completed no sooner than 4 weeks post-term age.
- The yellow ball screening item should only be completed when the child is older than 8 weeks CGA.

Required resources (lures) and environment

- ☐ Black and white visual lure (available here)

- ☐ 6cm dangling yellow ball (lure), on black string

Positioning

- Conduct the screening in the position where the child is most comfortable.
- For younger infants, this is typically:
    - Supine on a flat, firm surface, *or*
    - In a parent's lap if the infant has difficulty tolerating supine positioning.
- For older infants, in a seated position such as a highchair or feeder seat is recommended.
- Observe for any **preferential head turning**.
    - Where possible, gently support the child's head to maintain a midline position. Utilise postural supports including a peanut pillow, towels as required.

Methods

Observe the child's response to mother's face and whether they hold fixation during social play and to a silent face.

Observe the child for any unusual eye movements or fixed squint.

The visual lures should be positioned approximately 30 cm from the child and at eye level. Give the child time to fixate the lure (the yellow lure can be spun in one place to attract attention).

Move the lure slowly to give the child time to sustain fixation. Move to the extremes of gaze to left and right horizontally and in an arc to encourage following up and then down.

Consider visual fields and whether the child follows into each visual field.

Scoring and Interpretation

A **positive screen (red flag)** is identified if **any** of the following are observed:

"Yes" response to any of the following items:

- "Yes" to **parental concern**
- Presence of **roving eye movements**
- Presence of **squint/strabismus**

"No" response to **any** of the following items:

- Fixation on **face**
- Fixation on **black and white target**
- Ability to **follow into both visual fields**
- Fixation and following a **dangling yellow ball** (after 8 weeks CGA)

Next steps following a positive screen

Any positive screen indicates the need for onward referral for a comprehensive vision assessment, including an Ophthalmology referral.

Developed by the Kids Rehab WA team at Perth Children's Hospital.

APPENDIX D: Vision resource kits & ideas to encourage use of vision

VISION RESOURCE KITS

Vision resource kits for three different stages of visual ability have been developed by Kids Rehab WA, Perth Children's Hospital (Associate Professor Alison Salt & Natalie Cavallo) to support children across developmental stages and levels of vision, using tailored materials to promote visual engagement.

- Stage 1 is designed for children with lower levels of vision – light perception, light reflecting or only black and white targets.
- Stage 2 is for children who can fix and follow but have reduced visual acuity or reduced visual fields (e.g., possible hemianopia).
- Stage 3 supports children who need to further develop visual attention skills.

Stage 1 is presented below as an example. Future work will provide clearer guidance and training for Stage 2 and Stage 3, to support clinicians in using these materials effectively and making activities more meaningful for infants.

Item	Picture	Use
Glow Stick **Bunnings:** Click Multi Colour Battery Powered Glowstick - Bunnings Australia		• Place your baby in a comfortable, well-supported position, such as on their tummy or in a highchair with a tray. Lay the black felt on the floor or over the tray, and place the Glow & Discover Light Bar on top. This will illuminate the lights and encourage your baby to engage with the toy. • Turn down the lights to help your baby to focus on the bright lights and sounds when pressing the buttons.
Glow & Discover Light Bar **Baby Bunting:** Baby Einstein Glow & Discover Light Bar | Interactive Toys | Baby Bunting AU		• Place your baby in a comfortable, well-supported position, such as on their tummy or in a highchair with a tray. Lay the black felt on the floor or over the tray, and place the Glow & Discover Light Bar on top. This will illuminate the lights and encourage your baby to engage with the toy. • Turn down the lights to help your baby to focus on the bright lights and sounds when pressing the buttons.

O Ball Rattle **Big W:** [Oball Rattle - Assorted* | BIG W]		• Place materials such as alfoil, cellophane, bubble wrap inside the O-Ball. Allow your baby to explore it while positioned comfortably (e.g in a bouncer, on your lap with their hands together lying on their back or on their side). • Hang the O-Ball from a play gym using link toys and shine a torch over it to help your baby find it more easily. Avoid shining the torch directly in your baby's eyes! • Thread the Glow Stick torch (included) through the O-ball with the lights dimmed, to help your baby find the O-Ball more easily. • Bring the O-ball towards your baby's hands, helping them to touch and explore it. This encourages your baby to connect their sense of touch, with what they can see.
B. toys – Baby rain glow squeeze cloud rattle **Amazon:** [Amazon.com: B. toys – Baby Light – Up Cloud Rattle – Rain – Glow Squeeze – Sensory Development & Comfort - Teething Rattle Toys for Babies 3+ Years Months : Toys & Games]		• Turn down the lights to help your baby to see the light from the rattle. Use link toys to hang the rattle if your baby is laying on their back under a play gym or from other positions like their pram.

Item	Picture	Use
Tinsel **Spotlight (during festive season)**		• Form the tinsel into a ball and thread it with string. Dim the lights and shine the torch (included) on the tinsel. Slowly spin the tinsel to catch the light and make it more visible for your baby. • Dangle the tinsel from a playgym or mobile, with the lights dimmed and the torch light shining on the tinsel. Encourage your baby to reach for it by first bringing it close to their hands for exploration.
Wrist rattle & foot finder **Big W:** Playgro Jungle Wrist Rattle and Foot Finder | BIG W		• Add bells to the rattles by sewing these on, to increase auditory feedback. This will add more opportunities for your baby to use their hands to find the bells! • Play Peekaboo with your baby's feet- bring your baby's feet together, kiss or blow raspberries, pause and wait for your baby's reaction, such as wriggling their hands or feet, to signal they're excited for more!
Baby Touch: My First Book **Booktopia:** Baby Touch : My First Book by Ladybird | A black-and-white cloth book | 9780241439463 | Booktopia		• Encourage your baby to touch and explore the noisy book. Talk about what's in the book and help your baby focus on it by ensuring they are in a comfortable position.
Black Felt **Spotlight:** Plain 90 cm Acrylic Felt Fabric Black		• Use the black felt to add contrast, making it easier for your baby to focus on the toys and objects placed on it. Use the black felt as a mat for your baby's tummy time or over their highchair tray. • Use the black felt as a backdrop against a wall. Hang items such as Christmas ornaments or lights, tinsel or reflective paper such as aluminium foil to draw your baby's attention.

Developed by the Kids Rehab WA team at Perth Children's Hospital.

IDEAS TO ENCOURAGE USE OF VISION

It is important to encourage your child to use the vision they have. Each child will respond differently to different types of visual stimulation.

Positioning

Ensure that your child is well supported and comfortable. It will be easier for them to concentrate on their visual tasks if they do not have to concentrate on trying to maintain balance or being uncomfortable. Good positioning also allows you to get face to face with your child.

How to position your child in a supportive way

To be comfortably positioned and ready for visual tasks, it is important that your child is not sliding forward or slouching sideways in their seat and that their body and head is supported in an upright position.

- This can be achieved by:
- Using a tumble form or highchair.
- Using towels to 'prop up' your child (either by placing them at their sides, or under their bottom).
- Playing in their stroller.
- Using a table and chair which is at an appropriate height for them.

Reduce distractions

Reducing distractions can help your child to concentrate purely on the visual task.

Reducing distractions can be achieved by

- Reducing background noise (turn off TV/radio).
- Finding a quiet room or area.

Good Lighting

Facilitate play for your child in an environment that is well lit with no glare.

How to ensure good lighting during the day

- Ensure your child's back is towards the light source.
- Light should be shining directly on the object.
- Be mindful of reflected light, such as off metallic objects or white surfaces, as these can cause significant glare.

High contrast

Ideas to create a high contrasting environment for play

- Bold, bright colours placed on a high contrast background (e.g., placing a sheet of black felt under a red toy) enhances the outline and makes them easier to see.
- Black and white striped toys.
- Try determining if there is a particular colour your child responds to best.

Uncluttered environment

It is important to keep the surroundings free from unnecessary clutter as this may interfere with your child's ability to focus on a visual task.

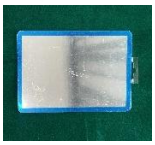
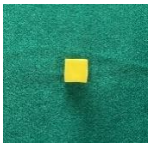
How to set up your child's play area

- Only place one or two brightly coloured objects out during play.
- Place toys on a high contrast area (e.g., white or black sheet), avoid 'busy' floor mats.
- Keep toys within reaching distance so the child can learn where they are. As they learn to explore their environment, these can be moved further away to encourage them to explore further.

Please talk to your Occupational Therapist for further ideas and recommendations.

Developed by the Kids Rehab WA team at Perth Children's Hospital.

NEAR DETECTION SCALE - RESOURCE CHECKLIST

☐	**Penlight Torch (with 'oogly')**	
☐	**Penlight torch, glowing source**	
☐	**Light reflecting object (Mirror)**	
☐	**12 cm Light reflecting object (Tinsel ball)**	
☐	**12 cm non-light reflecting object (Black and yellow ball)**	
☐	**6cm object (Yellow ball)**	
☐	**2.5 cm object (Yellow cube)**	
☐	**1.2cm object (Yellow smartie)**	
☐	**0.5 cm object (Saccharine tablet e.g. Equal)**	
☐	**0.3 cm object (Hermaseta tablet)**	
☐	**0.1cm object (yellow 100's and 1000's)**	

Near Detection Scale, developed by Dr Patrcia Sonksen: Sonksen, P. M., Petrie, A., & Drew, K. J. (1991). Promotion of visual development of severely visually impaired babies: Evaluation of a developmentally based programme. *Developmental Medicine & Child Neurology, 33*(4), 320–335. https://doi.org/10.1111/j.1469-8749.1991.tb14883.x

Salt, A.T., O'Reilly, M.A., Sakkalou, E. and Dale, N.J. (2020), Detection vision development in infants and toddlers with congenital vision disorders and profound-severe visual impairment. *Dev Med Child Neurol, 62*, 962-968. https://doi.org/10.1111/dmcn.14525

APPENDIX F: Near Detection Scale - scoring and administration instructions

Near Detection Scale – scoring

Fixation at 30 cm	**Resource required**	**Location**	**NDS Score**	**Comments** (specify if distance is closer than 30cm) *Describe visual behaviour; alerts, holds gaze, follows when moving through full arc or <90 º, uses peripheral vision*
No light perception			**0**	
Light only (dark room)	**Glowing light, torch**		**1**	
Light reflection object	**Tinsel ball**	**Dangling in space (at 30cm)**	**2**	
12 cm non-light reflecting object	**Black & yellow ball**		**3**	
6 cm	**Yellow ball** **Black & white ball** *(if 6-8 weeks CA)*		**4**	
2.5 cm	**Yellow cube**	**Table top or floor, on plain dark background e.g green, black**	**5**	
1.2 cm	**Yellow smartie**		**6**	
0.5 cm	**Sweetener**		**7**	
0.3 cm	**Sweetener**		**8**	
0.1 cm	**100 and 1000s sprinkle**		**9**	

Near Detection Scale, developed by Dr Patrcia Sonksen: Sonksen, P. M., Petrie, A., & Drew, K. J. (1991). Promotion of visual development of severely visually impaired babies: Evaluation of a developmentally based programme. *Developmental Medicine & Child Neurology, 33*(4), 320–335. https://doi.org/10.1111/j.1469-8749.1991.tb14883.x

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Near Detection Scale - administration instructions

- Lures should dangle on a black string (about 20cm long with your hand away from the lure). The lure can be spun on the spot to attract the child's attention.
- The Tinsel ball and mirror should be used in a well-lit room or with light directed to it so that it sparkles, but the light is not directed to the child's eyes.
- For fixation on smaller objects, have the child seated with eyes about 30 cm from the tabletop or surface immediately in front of the child. Holding the lure, first show it to the child to gain their attention, then sweep your hand slowly across the tabletop with the lure hidden, dropping it along the trajectory of your sweep, continue the complete sweep so that the child does not see where your hand stops. Watch for visual fixation on the lure in different positions. The child may attempt to pick up the lure or not. It is the clear and repeatable fixation that is being assessed.

Form developed by the Kids Rehab WA team at Perth Children's Hospital.

Near Detection Scale, developed by Dr Patrcia Sonksen: Sonksen, P. M., Petrie, A., & Drew, K. J. (1991). Promotion of visual development of severely visually impaired babies: Evaluation of a developmentally based programme. *Developmental Medicine & Child Neurology, 33*(4), 320–335. https://doi.org/10.1111/j.1469-8749.1991.tb14883.x

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