Beyond the Bump:

The lasting impact of Paediatric Concussion Management

A Quality Improvement Project

Paediatric Brain Injury Rehabilitation Team

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Acknowledgements

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PBIRT Team

Dr Guillaume Fayolle

Wendy McConnell

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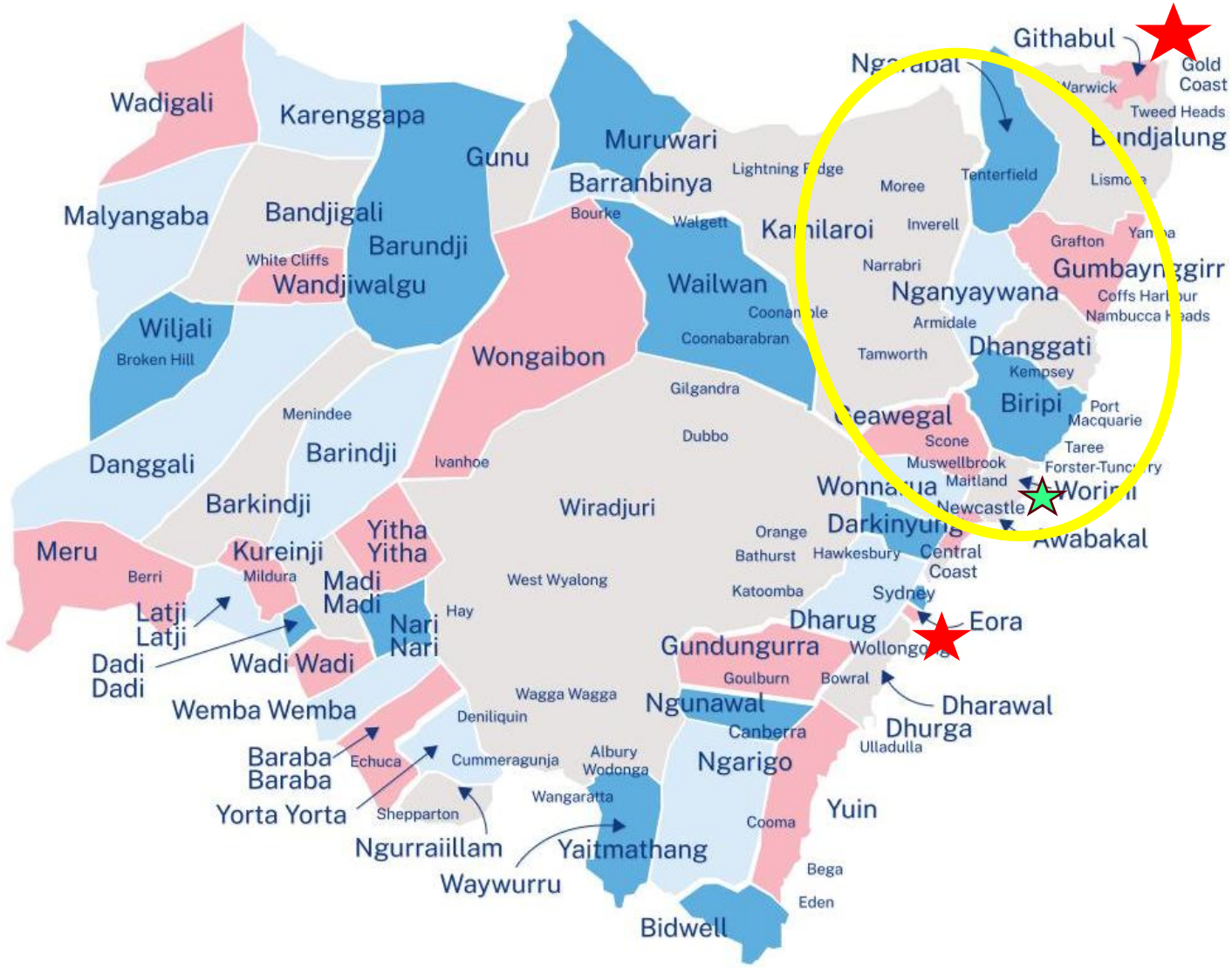
Paediatric Brain Injury Rehabilitation Team (PBIRT)

- Inpatient team
- Outpatient team
  - Approx 180 patients
  - Taree and Tamworth Outreach bi-annually
  - Manage all concussion referrals

Aboriginal nations and languages in NSW & ACT



NSW Education Department 2025

2019 Case Study: Rebecca

Initial weeks

Referral from ED:

13yo female,

Rugby injury

Brief LOC, GCS 14

Passed AWPTAS

Referred to for phone call follow up

Phone call: 3 weeks post injury

Daily headaches

Napping++

School refusal

Hx Anxiety, Dyslexia

No physical activity/sport

Plan: Rest until symptoms subside + GP review

Phone call: 6 weeks post injury

No GP review

Headaches: multiple / day, 6/10, frontal.

Napping

Hasn't returned to sport or activity

Plan: found a clinic appointment in 6/52 with team Neurologist

Clinic 12 weeks post injury

Plan:
No sport until headaches improve.
Start Periactin, graded return to school
Review 2/12

UPDATE: @ 5 months: No headaches, improving, discharge.

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2019: What we noticed

Sleep

Prolonged rest periods, impacting function and recovery

High achieving teens found it hard to rest/go slow

Difficult to re-establish sleep hygiene

Headaches and Anxiety

Headaches++

Parental anxiety/urgency for further imaging/tests

Ongoing consequences to self, family, school, activity and sport

Trends

Majority local referrals

No consistent validated assessment tool

Difficulty accessing medical clinics

Symptom education only

Once reviewed medically, complaints of symptoms reduce

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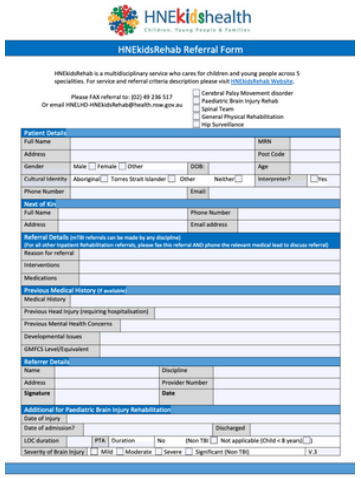
Previous mTBI referral and management process

Diagnosis and acute care

EDUCATION

Referral to PBIRT

REFERRAL



Follow up Phone Call

PHONE

2-week phone call follow up

Concussion Mx & review

REVIEW

Phone support & education

Persistent symptoms?
Escalation and find medical appointment

?Medical appointment

Discharge or onward referral

DISCHARGE

Onward referral
- Adult sports mTBI clinic
- Pain Service

Discharge

2019 Data in Review (67 patients)

Days to First Contact

20 days

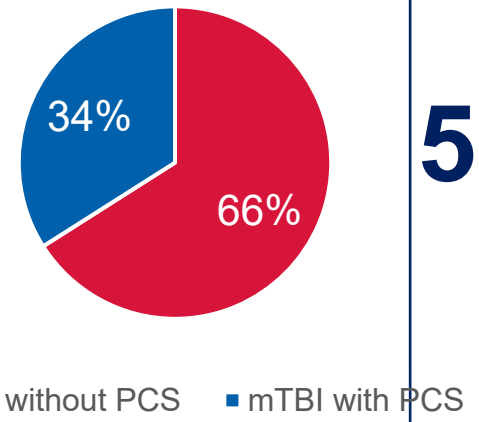
Service Request Length

55 days

Time to Medical Review

58days

Percentage of PCS



Number of Referrals

5.5/month

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Benchmarking and Evidence

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Benchmarking

SCHN

Finding clinic space within rehab clinics

2 week follow up phone calls

Starting to do phone calls earlier

CHISM

Developed Concussion Action Plan tools

Dedicated Concussion Clinics
Staff Specialists
Exercise Physiologist
Physiotherapist
OT's etc

QPRS

Admission form using PCSI-P scale

Calling ASAP

Graded return information

Family to call at a month

Booked into clinic

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Evidence

Early injury evaluation

Contents lists available at ScienceDirect

Journal of Science and Medicine in Sport

journal homepage: www.elsevier.com/locate/jsams

Original research

Early injury evaluation following concussion is associated with improved recovery time in children and adolescents

Maree Cassimatis [a], Rhonda Orr [a,b], Andrew Fyffe [a,b], Gary Browne [b,c,*]

[a] Discipline of Exercise and Sports Science, Sydney School of Health Sciences, Faculty of Medicine and Health, The University of Sydney, Australia
[b] Sydney Children's Hospital Network, Children's Hospital Institute of Sports Medicine, Children's Hospital Westmead, Australia
[c] The Children's Hospital at Westmead Clinical School, Discipline of Child and Adolescent Health, The University of Sydney, Australia

Factors predictive of a protracted concussion recovery were:

1. **Delayed evaluation time**
2. **High initial symptom burden at first clinic presentation (measured via the Post-Concussion Symptom Scale).**

Screening guidelines associated with improved recovery time

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Evidence

Return to activity

ORIGINAL RESEARCH

Graded Exercise Testing Predicts Recovery Trajectory of Concussion in Children and Adolescents

Orr, Rhonda PhD*; Bogg, Tina BExPhys†; Fyffe, Andrew BExPhys†; Lam, Lawrence T. PhD‡; Browne, Gary J. MBBS, MSpMed†,§

Author Information

Clinical Journal of Sport Medicine 31(1):p 23-30, January 2021. | **DOI:** 10.1097/JSM.0000000000000683

Original Investigation

December 20, 2016

Association Between Early Participation in Physical Activity Following Acute Concussion and Persistent Postconcussive Symptoms in Children and Adolescents

Anne M. Grool, MD, PhD[1]; Mary Aglipay, MSc[1]; Franco Momoli, PhD[1]; et al

Author Affiliations | Article Information

JAMA. 2016;316(23):2504-2514. doi:10.1001/jama.2016.17396

Randomized Controlled Trial > Lancet Child Adolesc Health. 2021 Nov;5(11):792-799. doi: 10.1016/S2352-4642(21)00267-4. Epub 2021 Oct 1.

Early targeted heart rate aerobic exercise versus placebo stretching for sport-related concussion in adolescents: a randomised controlled trial

John J Leddy [1], Christina L Master [2], Rebekah Mannix [3], Douglas J Wiebe [4], Matthew F Grady [5], William P Meehan [6], Eileen P Storey [7], Brian T Vernau [8], Naomi J Brown [5], Danielle Hunt [9], Fairuz Mohammed [10], Andrea Mallon [8], Kate Rownd [10], Kristy B Arbogast [11], Adam Cunningham [12], Mohammad N Haider [12], Andrew R Mayer [13], Barry S Willer [14]

Early physical activity within 7 days of acute injury compared with no physical activity is associated with reduced risk of PPCS at 28 days

Gradual exercise introduction is a safe and effective way to assist recovery

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Evidence

School

JAMA Network Open

Original Investigation | Pediatrics

Association Between Early Return to School Following Acute Concussion and Symptom Burden at 2 Weeks Postinjury

Christopher G. Vaughan, PsyD; Andrée-Anne Ledoux, PhD; Maegan D. Sady, PhD; Ken Tang, PhD; Keith Owen Yeates, PhD; Gurinder Sangha, MD; Martin H. Osmond, MD; Stephen B. Freedman, MD; Jocelyn Gravel, MD; Isabelle Gagnon, MD; William Craig, MD; Emma Burns, MD; Kathy Boutis, MD; Darcy Beer, MD; Gerard Gioia, PhD; Roger Zemek, MD; for the PERC 5P Concussion Team

For older children and adolescents, early return to school within one to two days after injury may be associated with more rapid recovery.

Growing evidence that prolonged absences from school and other life activities after a concussion may be detrimental to recovery.

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Evidence

Headache

Pediatric Neurology 50 (2014) 464–468

Contents lists available at ScienceDirect

Pediatric Neurology

journal homepage: www.elsevier.com/locate/pnu

Original Article

Does Analgesic Overuse Contribute to Chronic Post-traumatic Headaches in Adolescent Concussion Patients?

Geoffrey L. Heyer MD [a,b,*], **Syed A. Idris MD** [a,b]

[a] *Department of Pediatrics, Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio*
[b] *Department of Neurology, Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio*

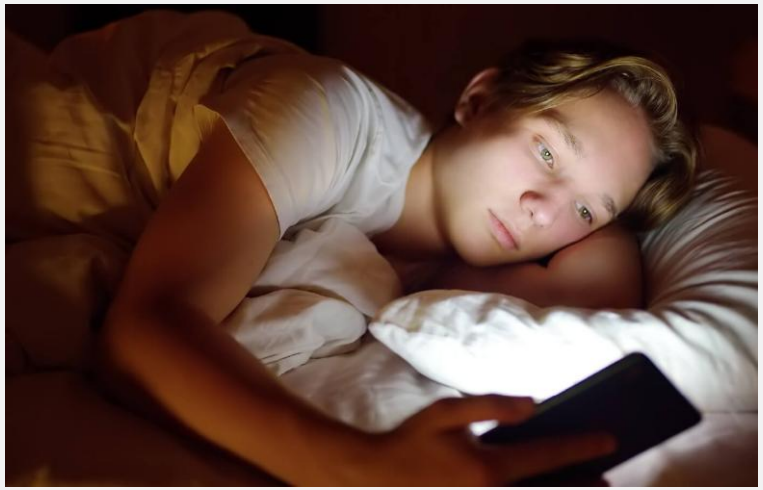
70% of chronic post-traumatic headache was probable medication overuse headache

68% resolution or improvement of headache after discontinuing analgesics.

Monitor for excessive use of analgesics

Evidence

Sleep



Sleep outcomes in pediatric mild traumatic brain injury: a systematic review and meta-analysis of prevalence and contributing factors

Suzana Djukic [1], Natalie Lynette Phillips [1], Suncica Lah [1]

Affiliations + expand

PMID: 36413091 DOI: 10.1080/02699052.2022.2140198

- Sleep disturbances are common but tend to decrease with time

- Post Concussive symptoms can result from, and exacerbate, sleep disturbances in a “vicious cycle”

Normalising the sleep wake cycle is important

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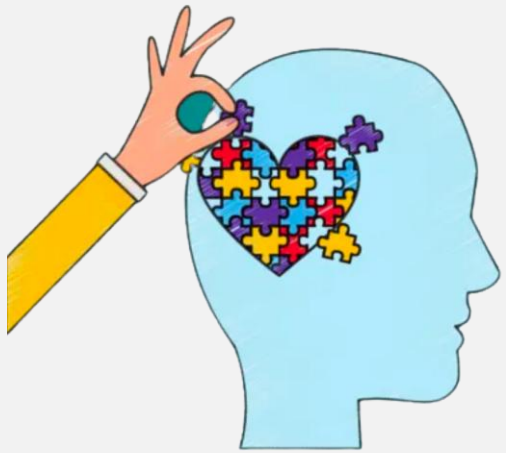
Evidence

Mental Health



Review

Mental health after paediatric concussion: a systematic review and meta-analysis

Alice Gornall [1,2] Michael Takagi [1,2,3] Thilanka Morawakage,[2] Xiaomin Liu,[2] Vicki Anderson [2,3,4]

- Children with concussion compared to controls experienced significantly higher levels of
  - Internalising (withdrawal, anxiety, depression, post-traumatic stress)
  - Externalising (conduct problems, aggression, attention, hyperactivity)

Mental health should be evaluated as part of standard paediatric concussion assessment

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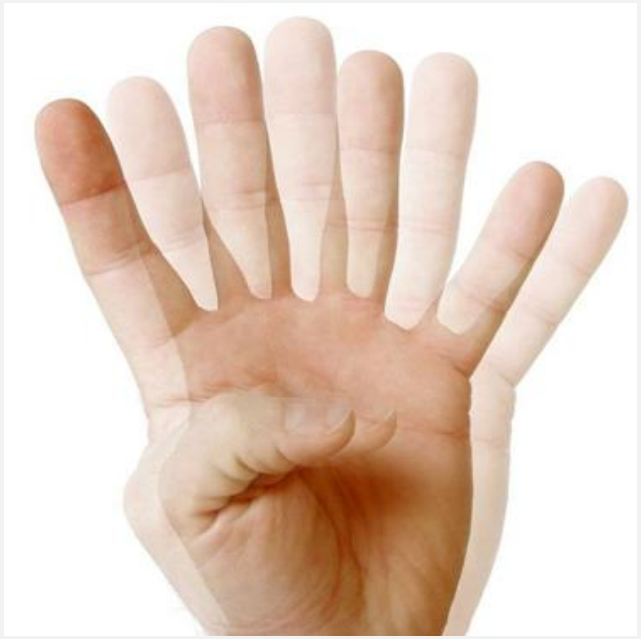
Evidence

Oculomotor dysfunction



Review > J Neurol Sci. 2016 Feb 15:361:79-86. doi: 10.1016/j.jns.2015.12.010. Epub 2015 Dec 9.

Ocular motor assessment in concussion: Current status and future directions

Rachel E Ventura [1], Laura J Balcer [2], Steven L Galetta [3], Janet C Rucker [4]

Affiliations + expand

PMID: 26810521 DOI: 10.1016/j.jns.2015.12.010

- 61% of patients report symptoms on oculomotor screening
- Convergence, saccadic eye movements and smooth pursuit should be routinely screened
- Gaze stability - has been shown to improve dynamic visual acuity to reduce symptoms

Oculomotor symptoms have been associated with longer recovery periods post-concussion

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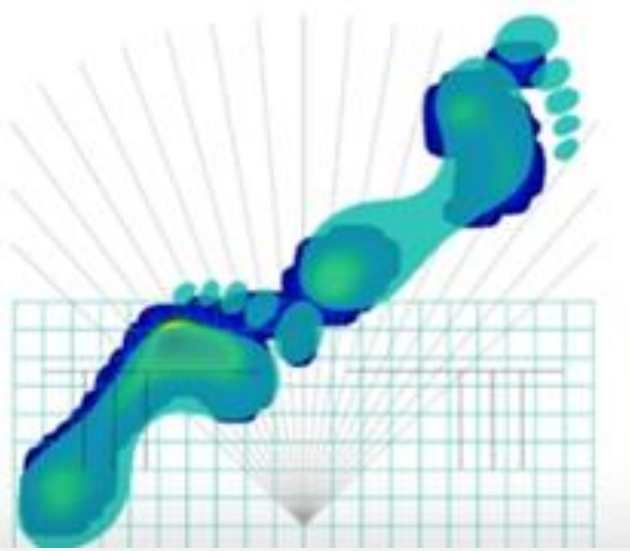
Evidence

Vestibular dysfunction



J Pediatr. 2015 May;166(5):1221-5. doi: 10.1016/j.jpeds.2015.01.039. Epub 2015 Mar 5.

Vestibular Deficits following Youth Concussion

Daniel J Corwin [1], Douglas J Wiebe [2], Mark R Zonfrillo [3], Matthew F Grady [4], Roni L Robinson [5], Arlene M Goodman [6], Christina L Master [7]

Affiliations + expand

PMID: 25748568 PMCID: PMC4485554 DOI: 10.1016/j.jpeds.2015.01.039

- Up to 81% of patients have vestibular abnormality on assessment
- Approximately one third will have positional vertigo

- Habituation - repeated exposure leads to reduction of motion sensitivity symptoms
- Gaze stability - induces adaptation of VOR
- Re-positioning maneuver's - if BPPV present

Vestibular rehabilitation has been shown to accelerate recovery for concussed paediatric athletes

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Evidence

Cervical spine disorders

Review > J Athl Train. 2016 Dec;51(12):1037-1044. doi: 10.4085/1062-6050-51.12.15. Epub 2016 Nov 11.

Cervical Injury Assessments for Concussion Evaluation: A Review

Kelly Cheever [1], Keisuke Kawata [2], Ryan Tierney [1], Anne Galgon [1]

Affiliations + expand

PMID: 27835042 PMCID: PMC5264559 DOI: 10.4085/1062-6050-51.12.15

- There can be significant overlap between concussion and whiplash
- Cervical spine pathology following concussion can contribute to neck pain, headaches, dizziness and balance difficulties
- Exercise/manual therapy - restores active/passive ROM, strength, motor control and stability to reduce referred pain/headache

Physiotherapy for the cervical spine can help patients recover more quickly from concussion

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Evidence

RETURN TO PLAY

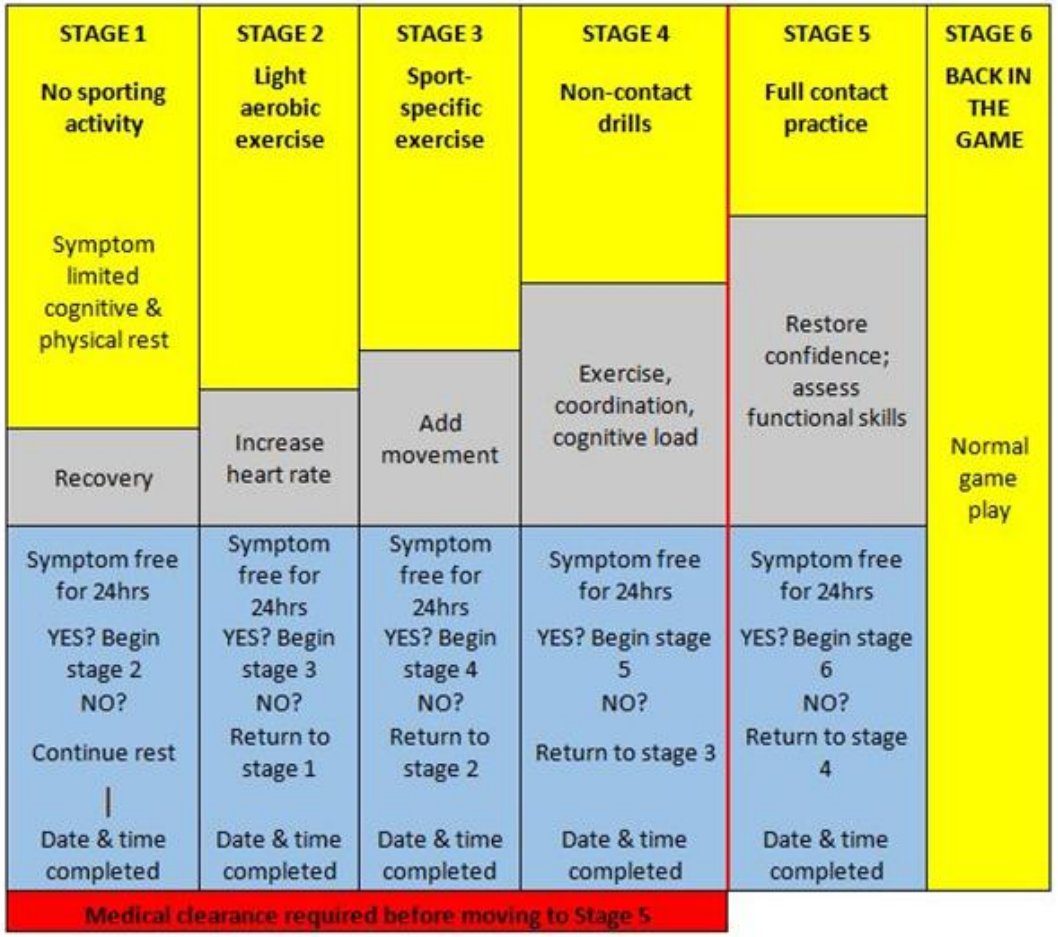

Figure 3: Return to play (Parachute canada)

Practice Guideline > Pediatrics. 2010 Sep;126(3):597-615. doi: 10.1542/peds.2010-2005.
Epub 2010 Aug 30.

American Academy of Pediatrics. Clinical report--sport-related concussion in children and adolescents

Mark E Halstead, Kevin D Walter; Council on Sports Medicine and Fitness

Collaborators + expand

PMID: 20805152 DOI: 10.1542/peds.2010-2005

Prior to working through a Return To Play (RTP) protocol the child/adolescent;

- Is symptom free
- Has returned to school/work
- Has ceased medication
- Has a normal neurological examination
- Is back to baseline on balance and cognitive assessment

Graded Return to Play for children and adolescents should be individualised and more conservative than adult athletes

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Pilot model

What did we change?

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Earlier phone call follow up

Aim for phone call follow up within 7 days from referral

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Concussion Clinic

Registrar / CNC led

Monthly

3 patients per clinic with PCS (symptomatic > 4 weeks)

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Concussion Action Plan (CAP) - extended

For patients with a complex concussion requiring specialist treatment

FAMILY NAME	MRN
GIVEN NAME	☐ MALE ☐ FEMALE
D.O.B. _____ / _____ / _____	M.O.
ADDRESS	
LOCATION/WARD	

Doctor to complete

Your child has a concussion. Their symptoms include:

Physical
- ☐ Headache
- ☐ Nausea
- ☐ Fatigue
- ☐ Vomiting
- ☐ Dizziness
- ☐ Sensitivity to light
- ☐ Sensitivity to noise
- ☐ Numbness/tingling
- ☐ Visual problems
- ☐ Balance problems

Cognitive (thinking)
- ☐ Feeling mentally foggy
- ☐ Problems concentrating
- ☐ Problems remembering
- ☐ Feeling slowed down

Emotional
- ☐ Irritability
- ☐ Sadness
- ☐ Feeling more emotional than usual
- ☐ Nervousness

Sleep
- ☐ Drowsiness
- ☐ Sleeping more than usual
- ☐ Sleeping less than usual
- ☐ Trouble falling asleep

Over the next few days, symptoms may worsen or other symptoms may appear. Watch out for HEAD BUMPS (symptoms listed below). If they occur, seek urgent medical attention.

- **H** Headache, seizure, unconscious.
- **E** Eye problems (blurred/double vision).
- **A** Abnormal behaviour change.
- **D** Dizziness, persistent vomiting.
- **B** Balance dysfunction with weakness or numbness in legs/arms.
- **U** Unsteady on feet, slurred speech.
- **M** Memory impaired, confused, disoriented.
- **P** Poor concentration, drowsy, sleepy.
- **S** Something's not right (concerned about child).

Doctor's name: _____ Signature: _____ Date: _____

Direct parents to follow the CAP, overleaf. The CAP, Symptoms Log Sheet and other tools to support a child with concussion are available for download at kidshealth.org.au/concussion

Activity Prescription Guidelines:

The following activity prescription has been developed to help your child manage their concussion safely and effectively. Exercise levels are derived from your child's performance during graded exercise testing and deviating from these guidelines may put your child at risk of prolonged recovery. It is advised that if you have any questions or concerns you should consult your doctor or exercise physiologist.

Key:

RPE = rating of perceived exertion, your child's subjective rating of how intense the exercise is out of 10.
HRt = heart rate threshold, the heart rate at which your child experiences overwhelming symptom exacerbation during exercise testing.

For parents

Have your child complete the following zone and stepwise program. Aim to keep activity within the **rating of perceived exertion (RPE)** or heart rate guide (if your child has a heart rate monitoring device). Seek urgent medical attention if your child's symptoms worsen or if other symptoms appear (see the HEAD BUMPS symptoms list overleaf).

Red zone

REST PERIOD: Days 1 and 2 following injury: (Date started: _____)

Rest your child from any physical or cognitive activity.

Supportive care
- Encourage good sleep patterns. Rest your child with no TV, phone or disruptions.
- Provide regular meals and a minimum of 2L of water per day.
- Use over the counter headache medication as needed.
- Complete the Symptoms Log Sheet, monitoring your child's symptoms and signs. Continue using the sheet until your child reaches 14 days without symptoms.
- Encourage your child to have a positive mental attitude towards their recovery.

Activity Dose: RPE 0 - 1 /10 Nothing at all - very, very light. Heart rate < 120 bpm

After 2 days of acute rest, you may move on to the next zone.
Use the Symptoms Log Sheet to record any symptoms that your child develops. If your child develops symptoms during an activity, stop the activity and let your child rest. When the symptoms are gone, have your child try the activity again.

Orange zone

RELATIVE REST PERIOD: Until cleared to return to light activity (Date started: _____)

Recommendations:
- Start low level physical and cognitive activity. Your child can now move around more freely.

Activities may include:
☐ less than 20 minutes daily walking ☐ balance exercises e.g. single leg stands and heel-toe walking ☐ cognitive tasks e.g. reading

Supportive care
- Try to reduce and/or stop headache medication once your child is more physically/mentally active.
- Should sleep pattern remain a problem, then further assessment and possible treatment with Melatonin may be considered. This will require medical supervision and is best discussed with your local GP.

Activity Dose: RPE 2 - 4 /10 Very light - light-moderate. Heart rate 120 - 140 bpm

See your GP to check that your child may progress to the next zone. Your child must be symptom tolerant before moving on to Step 1.
Use the Symptoms Log Sheet to record any symptoms that your child develops. If your child develops symptoms during an activity, stop the activity and let your child rest. When the symptoms are gone, have your child try the activity again.

Yellow zone

GRADED RETURN TO ACTIVITY (Date started: _____)

Step 1 – Light cognitive and physical activity
- Progress toward 30 minutes of cognitive exertion.
- Your child can perform 20 minutes of aerobic activity at 80% of their **heart rate threshold (HRt)**, increasing by 10% each week.

Progress to the next step if your child is symptom free for 24 hours.

Step 2 – Moderate cognitive and physical activity
- Part time school with accommodations (rest breaks, minimal homework, no exams) until able to handle 60 minutes or more of cognitive exertion.
- Specific skills and moderate aerobic activity for 20-30 minutes.

Progress to the next step if your child is symptom free for 24 hours.

Step 3 – Extended activity
- Progress towards full time school with minimal accommodations.
- More intense aerobic and skill-based activity on a more regular basis.

Progress to the next step if your child is symptom free for 24 hours.

Activity Dose: RPE 5 - 7 /10 Moderate - hard. HRt:_____ Heart rate 80% HRt +10% each week

Use the Symptoms Log Sheet to record any symptoms that your child develops. If your child develops symptoms during an activity, stop the activity and let your child rest. When the symptoms are gone, have your child try the activity again.

Green zone

RETURNING TO PRE-INJURY ACTIVITY (Date started: _____)

Once your child has been cleared to commence a return to activity protocol, they are ready to progress as follows:

Step 4 – Pre-injury activity (without contact)
- Full time school with minimal accommodations progressing when able to handle all classroom activities.
- Attend sport practice, however with no contact or collision activities.

Step 5 – Reconditioning (without contact)
- Full school.
- Progressively return to non-contact sports over the next few weeks (e.g. 10 minutes → half game→ full game).
- Prepare for return to play with extra aerobic and (if relevant) resistance training. Your child must have 14 days symptom free before returning to contact sport.

Your child must be symptom free for 14 days before moving on to Step 6. If clearance is needed for your child's school or sporting club, see your GP to obtain the sign off below.

Doctor's name: _____ Signature: _____ Date: _____

Step 6 – Full activity (with contact)
- Once your child has been symptom free for 14 days, return to all activities without restriction, including contact and collision sports.

Activity Dose: RPE 8 - 10 /10 Very hard - maximal. HRt:_____ Heart rate 80 - 100% HRt

Provided at Discharge

Up to 2 days rest

Gradual Return:
- Activity
- School
- Sport

CAP

Reed, N.*, Zemek, R.*, Dawson, J., Ledoux, AA., *et al*. (2023). *Living Guideline for Pediatric Concussion Care*. www.pedsconcussion.com. https://doi.org/10.17605/OSF.IO/3VWN9

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Website

Concussion Education

- Concussion Action Plan
- Symptom Fact Sheets
- Graded Return to School
- Graded Return to Sport

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About Us | John Hunter Children's Hospital | Facilities | Patients and Public | Professionals | Support Us

Home › Facilities › Community Health Services › HNEkidsRehab Services › Paediatric Brain Injury Rehabilitation Team

HNEkidsRehab is the Rehabilitation service of HNEkidsHealth and has a dedicated Paediatric Brain Injury Rehabilitation Team (PBIRT).

PBIRT cares for children and families through their journey of Acquired Brain Injury (ABI). This journey looks different for every family, but with PBIRT's support, we aim to help each child achieve their full potential.

PBIRT have a team based at John Hunter Children's Hospital for inpatient rehabilitation and a community team. Our community team are located at 621 Hunter St Newcastle West NSW.

Our staff aim to provide care and support from the time of injury/illness through to long-term rehabilitation.

Facilities

- John Hunter Childr
- Community Health
- Regional Hospitals
- John Hunter Childr Map
- District Wide Servi

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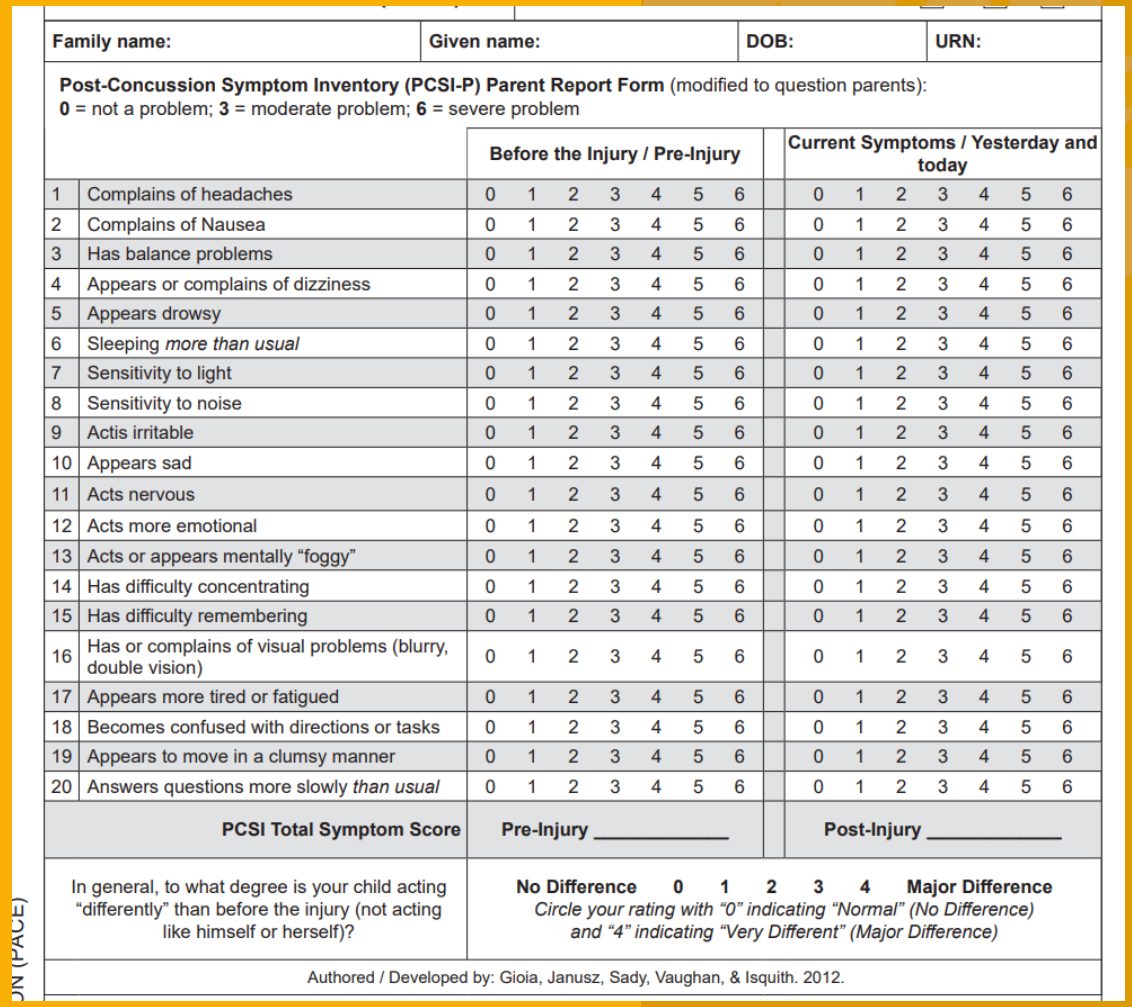
QPRS Intake form
PCSI- P

Parent reported measure of symptoms

Serial measurement of symptom burden



Family name:	Given name:	DOB:	URN:

Post-Concussion Symptom Inventory (PCSI-P) Parent Report Form (modified to question parents):
0 = not a problem; **3** = moderate problem; **6** = severe problem

		Before the Injury / Pre-Injury	Current Symptoms / Yesterday and today
1	Complains of headaches	0 1 2 3 4 5 6	0 1 2 3 4 5 6
2	Complains of Nausea	0 1 2 3 4 5 6	0 1 2 3 4 5 6
3	Has balance problems	0 1 2 3 4 5 6	0 1 2 3 4 5 6
4	Appears or complains of dizziness	0 1 2 3 4 5 6	0 1 2 3 4 5 6
5	Appears drowsy	0 1 2 3 4 5 6	0 1 2 3 4 5 6
6	Sleeping *more than usual*	0 1 2 3 4 5 6	0 1 2 3 4 5 6
7	Sensitivity to light	0 1 2 3 4 5 6	0 1 2 3 4 5 6
8	Sensitivity to noise	0 1 2 3 4 5 6	0 1 2 3 4 5 6
9	Actis irritable	0 1 2 3 4 5 6	0 1 2 3 4 5 6
10	Appears sad	0 1 2 3 4 5 6	0 1 2 3 4 5 6
11	Acts nervous	0 1 2 3 4 5 6	0 1 2 3 4 5 6
12	Acts more emotional	0 1 2 3 4 5 6	0 1 2 3 4 5 6
13	Acts or appears mentally "foggy"	0 1 2 3 4 5 6	0 1 2 3 4 5 6
14	Has difficulty concentrating	0 1 2 3 4 5 6	0 1 2 3 4 5 6
15	Has difficulty remembering	0 1 2 3 4 5 6	0 1 2 3 4 5 6
16	Has or complains of visual problems (blurry, double vision)	0 1 2 3 4 5 6	0 1 2 3 4 5 6
17	Appears more tired or fatigued	0 1 2 3 4 5 6	0 1 2 3 4 5 6
18	Becomes confused with directions or tasks	0 1 2 3 4 5 6	0 1 2 3 4 5 6
19	Appears to move in a clumsy manner	0 1 2 3 4 5 6	0 1 2 3 4 5 6
20	Answers questions more slowly *than usual*	0 1 2 3 4 5 6	0 1 2 3 4 5 6
	PCSI Total Symptom Score	**Pre-Injury** _____	**Post-Injury** _____
	In general, to what degree is your child acting "differently" than before the injury (not acting like himself or herself)?	**No Difference 0 1 2 3 4 Major Difference** *Circle your rating with "0" indicating "Normal" (No Difference) and "4" indicating "Very Different" (Major Difference)*	

Authored / Developed by: Gioia, Janusz, Sady, Vaughan, & Isquith. 2012.

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John Hunter Hospital Emergency Department

Collaboration with John Hunter Children's Hospital FACEM's

Concussion Action Plan's and referral forms now being used by the ED team

5P Prediction Tool (introduced 2024)

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Pilot Study mTBI Management Pathway

Diagnosis and acute care JHCH

REFERRAL

Education before discharge from JHCH

EDUCATION

Contact by PBIRT

PHONE

Ongoing mTBI Management

REVIEW

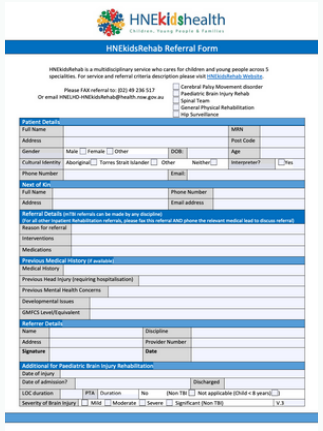
Clinic Review

CLINIC

Discharge Planning

Onward Referral

AFTER CARE


HNEkidshealth
HNEKidsRehab Referral Form


Concussion Action Plan (CAP)

REST and GRADUAL RETURN

SMS with CAP

Phone call < 1 week.

GP appointment

Education

PCSI ax

Vestibulo-occular Ax

(prior to clinic if needed)

School liaison

Telehealth

Refer mTBI clinic

Clinic review

Registrar

CNC

PT

Staff Specialist

Discharge

or

Onward referral

Paediatrician

Psychology

CHISM

etc

Can we predict who will get PPCS ?

Clinical Risk Score for Persistent Postconcussion Symptoms Among Children With Acute Concussion in the ED

Roger Zemek, MD[1]; Nick Barrowman, PhD[2]; Stephen B. Freedman, MDCM, MSc[3]; et al

» Author Affiliations | Article Information

JAMA. 2016;315(10):1014-1025. doi:10.1001/jama.2016.1203

Score Calculator

	0	1	2
Age of patient	○ 5 to <8 years	○ 8 to <13 years	○ 13 to <18 years
Sex of patient	○ Male		○ Female
How long did the patient's previous concussion last?	○ No previous concussion or Recovery in less than 1 week	○ Recovery took 1 week or longer	
Does the patient have a history of migraines?	○ No	○ Yes	
Did the patient answer questions more slowly than normal as compared to before the injury?	○ No	○ Yes	
On the BESS Tandem stance balance testing, how many errors did the patient have in 20 seconds?	○ 0-3 errors	○ 4 or more errors, or could not complete the balance testing	
Does the patient have a headache?	○ No	○ Yes	
Does the patient have sensitivity to noise?	○ No	○ Yes	
Is the patient more fatigued?	○ No		

CHEO Research Institute - Score Calculator (5pconcussion.com)

Community HealthPathways

Dr Elizabeth Cotterill
Dr Sam Baker

Collaboration

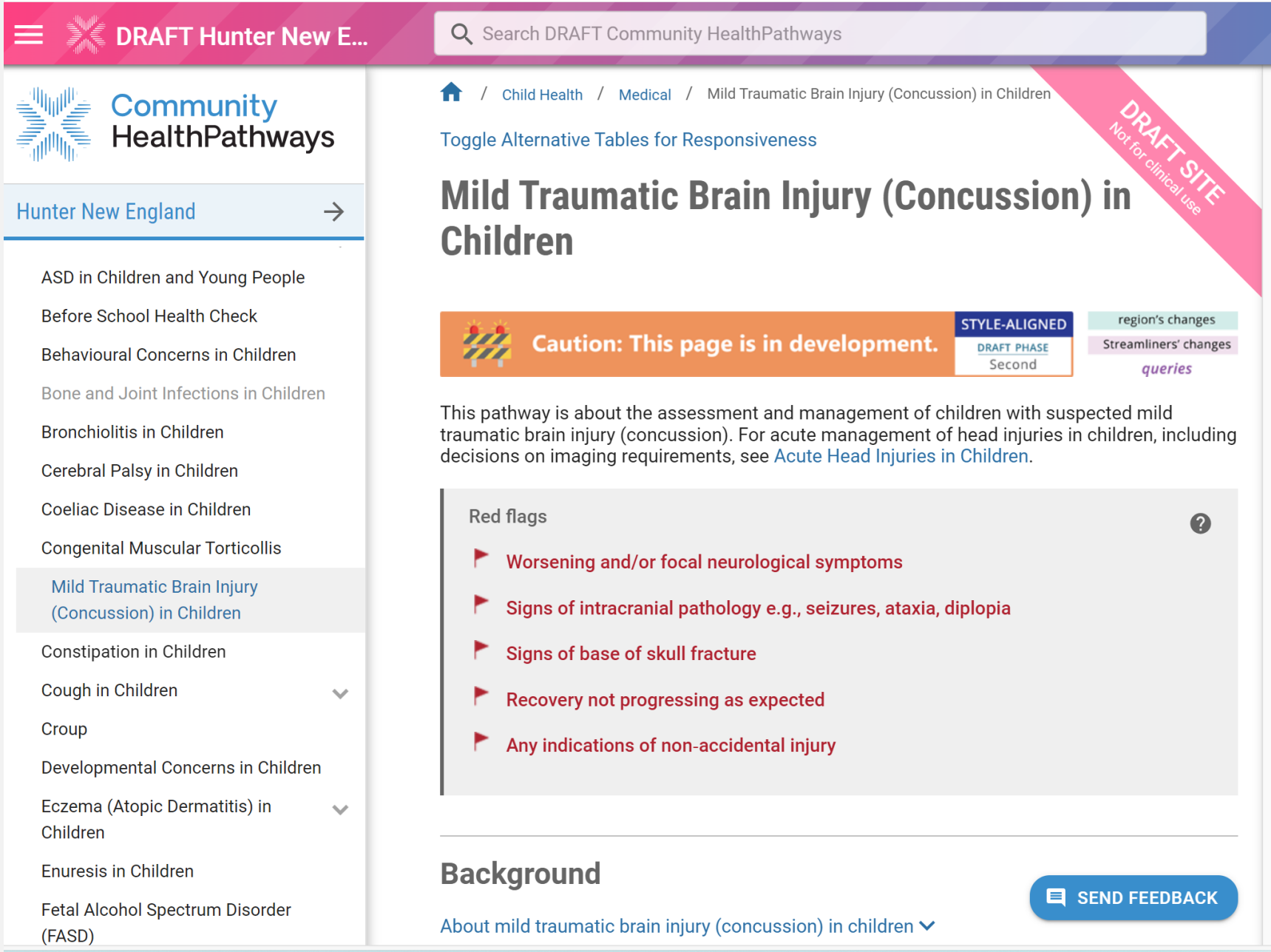
Resource for GPs

Current best practice

Now LIVE!

eReferrals for direct referrals to PBIRT team

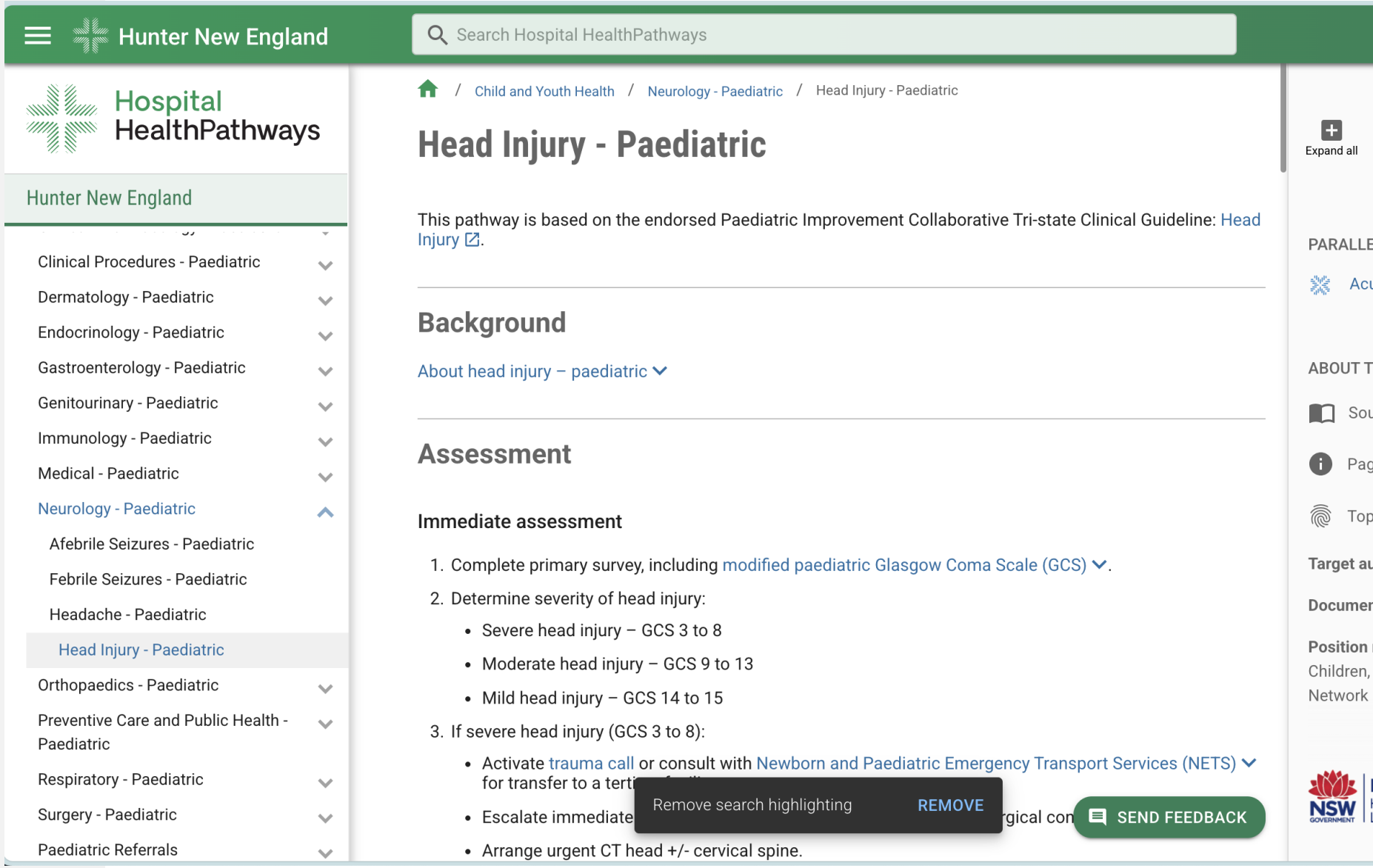
SeNTReferrals



District Guideline

Hospital Health Pathways

Pathways for rural and remote children and young people



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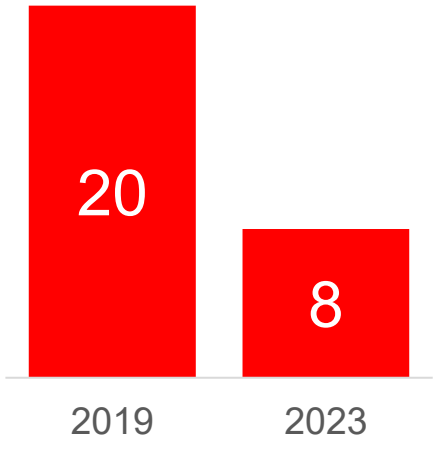
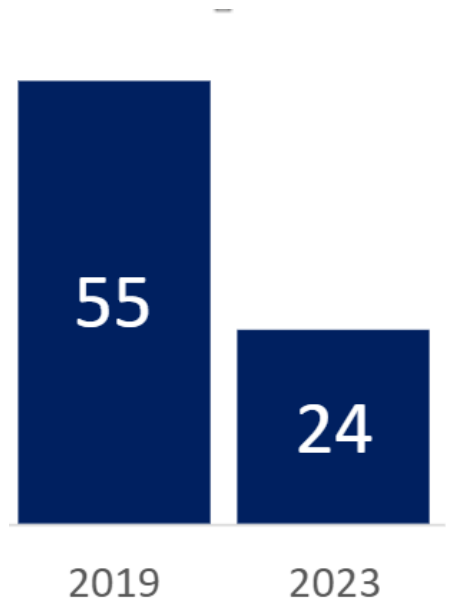
Results

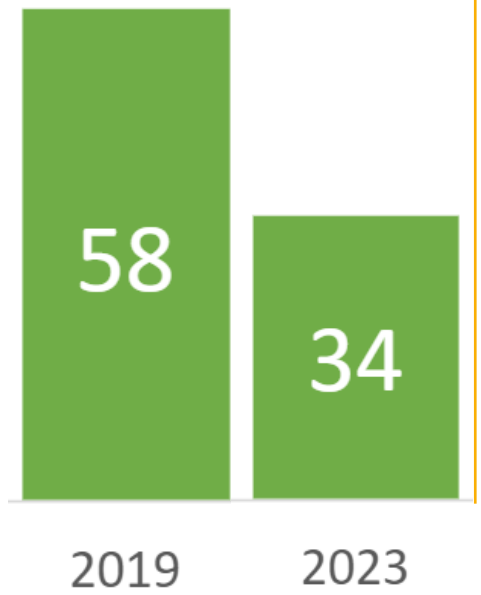
Days to First Contact



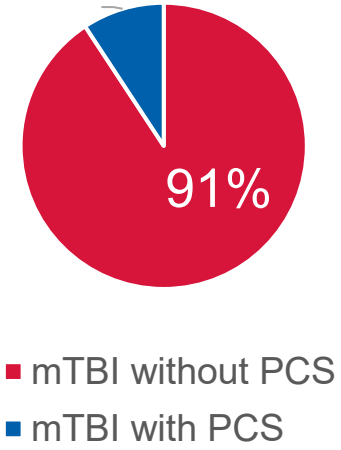
Length of Service Request



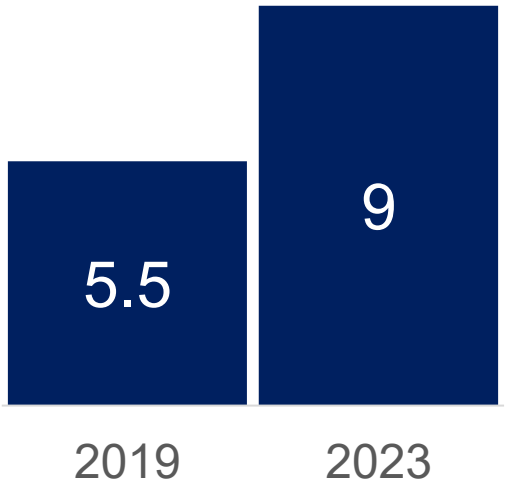
Time to Medical Review



mTBI with PCS



Number of Referrals /month



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7

Next steps...

2024

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Ongoing community awareness

Collaborating with District Paed CNC's

5P Concussion Tool: JHCH

Ongoing service development through potential funding opportunities

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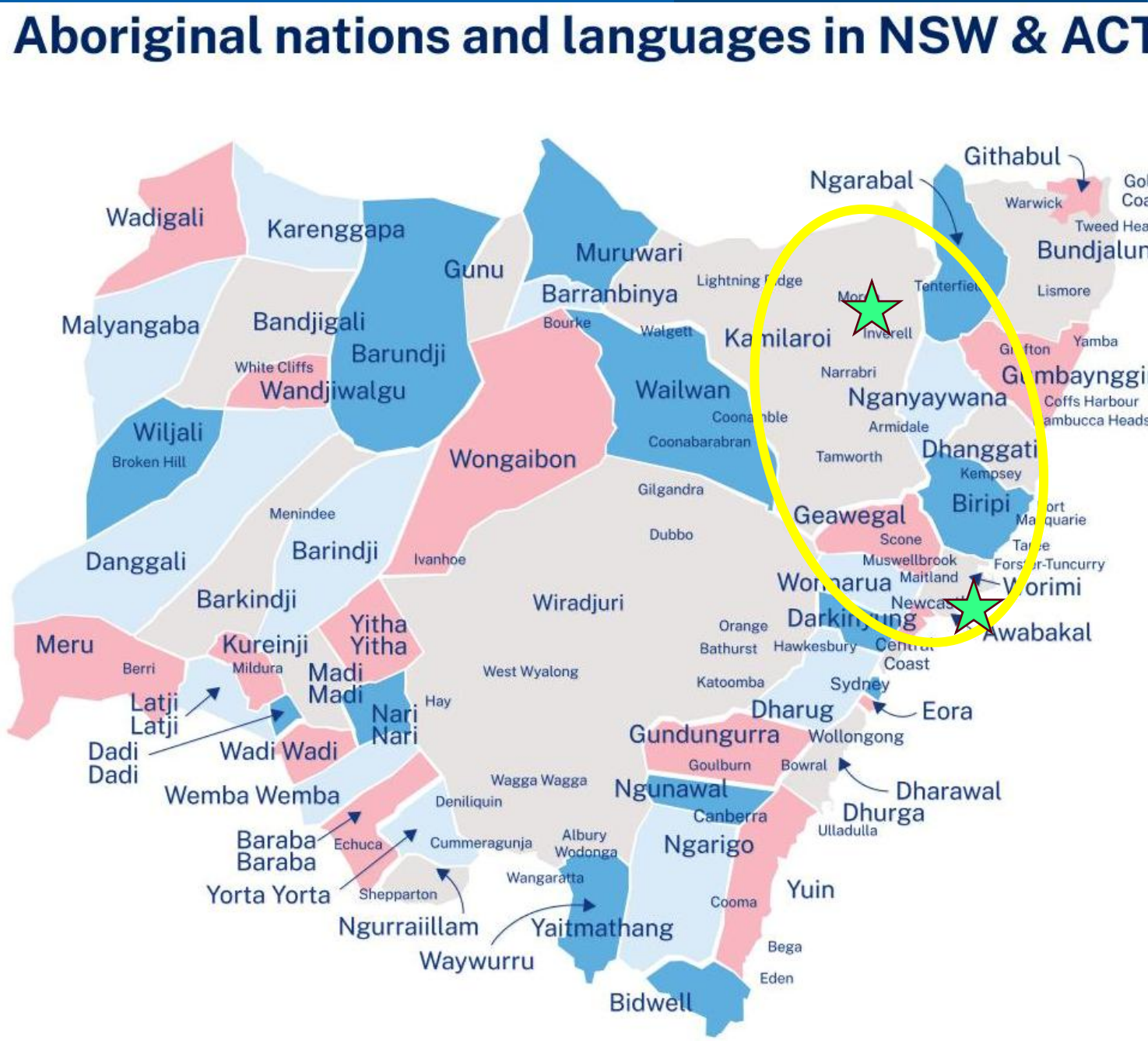
2025

Latest news!

Referral + 5P Risk score



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Thank You

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