

## Polio Oz News

March 2023—Autumn Edition

### Protein—What's All The Fuss?

**By Melinda Overall JP**

*Nutritionist / Counsellor*

[www.overallnutrition.com.au](http://www.overallnutrition.com.au)

Protein gets a lot of air time these days as *the* macronutrient to consume but is it all it's made out to be? It's certainly not a panacea nutrient and it shouldn't be consumed at the cost of other macronutrients but it does play a significant role in good health.

When we consume proteins, our bodies break them down into smaller chains of amino acids, which are then used by the body to synthesise the proteins our bodies need [1]. Researchers propose that there are between ten thousand and several billion proteins in the human body [2], and it is thought that each has its own function.

Proteins play a role in nearly every task in our cells. Key functions of proteins include [3]:

- Synthesis of hormones and neurotransmitters (chemical messengers in our bodies and brains);
- Muscle development, maintenance and movement;
- Fluid, electrolyte and pH balances;
- Enzymes used to catalyse chemical reactions;
- Storage and transport other molecules around the body such as iron and oxygen;
- Antibodies that support our immune system;
- Wound healing, tissue regeneration and nerve function [3];
- Protein also supports blood sugar stabilisation and supports satiation.

As we age, our daily protein requirements increase. This is to help reduce the risk of 'loss of muscle mass, strength, and function that progressively occurs with aging' [4]. This loss of

muscle mass is known as sarcopaenia and can be a factor in the development of other issues such as loss of mobility and obesity and overweight, and then secondary issues such as cardiovascular disease, diabetes, falls, fractures and frailty more generally [4,5,6].

Polio survivors have a higher risk of developing sarcopaenia than the general population due to neurogenic muscle weakness as well as age-related reduction of physical activity. It is estimated that between 60-90% of polio survivors do not recover full muscle strength following infection, predominantly due to different levels of paralysis [6]. Additionally, polio survivors can go on to develop post-polio syndrome (PPS), with some researchers estimating that between 15-80% of polio survivors will develop PPS. Two significant

characteristics of PPS include new or increased progression of muscle atrophy and muscle weakness [6].

As the Australian cohort of polio survivors age, the risk of developing sarcopenia increases. This is due to their history of poliomyelitis as well as the common nutrition issues that impact people as they age and/or live alone. Information about these issues can be found in my article in the

December 2022 issue of the [Polio Oz News](#).

Protein is a key nutrient in slowing the risk and progression of sarcopaenia in all people but intake requirements for polio survivors are higher than the rest of the population. Recommended dietary intake (RDI) of protein for the general population is listed in Table 1 [7]. It is important to note that RDIs refers to an amount of a nutrient that will help to keep approximately 97-98% of healthy individuals healthy, nothing more. RDIs don't take into account chronic illness or issues such as sarcopaenia.



## Polio Australia

Representing polio survivors

PO Box 2799  
North Parramatta NSW 1750  
Phone: +61 3 9016 7678  
contact@polioaustralia.org.au

President—Gillian Thomas OAM  
gillian@polioaustralia.org.au

Vice President—Gary Newton  
gary@polioaustralia.org.au

Secretary—Maryann Liethof  
maryann@polioaustralia.org.au

Treasurer—Alan Cameron  
alan@polioaustralia.org.au

Editor—Maryann Liethof  
editor@polioaustralia.org.au

### Inside this issue:

<a href="#">Protein-What's All The Fuss?</a>	1
<a href="#">President's Report</a>	3
<a href="#">From The Editor</a>	3
<a href="#">Program Updates</a>	4
<a href="#">2023 Victoria Conference</a>	5
<a href="#">Exercise And LEOp</a>	6
<a href="#">Aged Care Sector LEOp Training</a>	8
<a href="#">The Legacy Of Polio</a>	9
<a href="#">LEOp Screening Challenges</a>	12
<a href="#">ATSA Independent Living Expo</a>	13
<a href="#">Vale Peter Wierenga</a>	14
<a href="#">European Polio Conference</a>	14
<a href="#">Rare Polio Case</a>	15
<a href="#">nOPV2 Vaccine</a>	16
<a href="#">Truck Art To Create Polio Awareness (Pakistan)</a>	17
<a href="#">Polio This Week</a>	18

## Polio Australia's Websites



**MEDICAL ALERT**  
My medical history includes polio. I now experience symptoms of Late Effects of Polio. I may require additional assistance or specialised treatment to reduce my risks. Please discuss treatments with me, my family or carer, and my GP. Please also inform other staff of my condition. For more information on my surgical risks & planning for hospitalisations.

Late Effects of Polio  
**MEDICAL ALERT CARD**  
Download



Late Effects of Polio: Introduction to Clinical Practice  
**SECOND EDITION**  
NEWLY RELEASED  
Download

**Polio Australia**  
Representing polio survivors throughout Australia

Welcome to the Polio Australia website. Polio Australia is a not-for-profit organisation supporting polio survivors living in Australia. This website contains information about polio, the Late Effects of Polio, the work of Polio Australia and much more.

[www.polioaustralia.org.au](http://www.polioaustralia.org.au)

**Polio Australia**  
Improving health outcomes for Australia's polio survivors

The Polio Health website is a comprehensive resource for both health professionals and polio survivors. It contains clinically researched information on the Late Effects of Polio; the Health Professional Register; and where Polio Australia's Clinical Practice Workshops for Health Professionals are being held.

[www.poliohealth.org.au](http://www.poliohealth.org.au)

**Australian Polio Register**  
Have you added your polio details?

The Australian Polio Register was established by Polio Australia in October 2010 to gather information on the numbers of polio survivors living in Australia today, whether or not they contracted polio in this country. To make the Australian Polio Register truly reflective of the unmet need for polio services throughout Australia, we urge every Australian polio survivor to join the Polio Register. Our strength lies in our numbers—please help us to get you the services you need by adding your polio details to the Register. You can register online or by downloading and completing a [paper copy](#).

[www.australianpolioregister.org.au](http://www.australianpolioregister.org.au)

“In her finest gold-tipped pen,  
Nature writes the poem of  
autumn upon the earth.”

~ Laura Jaworski ~

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## President's Report



**By Gillian Thomas OAM**  
President

It's a new year bringing a new challenge to secure funding for the Clinical Practice Workshops (CPWs), which have become an integral part of Polio Australia's services to the post-polio community. Clinical Educator, Michael Jackson, has

been professionally dedicated to upskilling literally thousands of health care professionals since starting in 2019—including through the Covid-19 lockdowns. Michael has learned to be innovative in his delivery of CPW's and other educational modes. We believe that this has gone a long way to addressing the obvious knowledge gap in relation to Late Effects of Polio, resulting in better treatment options for polio survivors. Polio Australia is currently awaiting the outcome of our latest funding submission to the Federal Government via the pre-Budget process.

As outlined on pages 8 and 9, Polio Australia is working on expanding its CPW reach into Aged Care facilities, where so many of us are finding ourselves as the years progress. In my facility, I am continually educating the staff to ensure they

understand the difference between my needs and capacity, as opposed to others who have not had polio. We hope that more education in this sector will be a win-win for both polio survivors and care givers.

In January, we learned that Peter Wierenga, a long serving member on the Board of Polio Australia, passed away following a long illness (page 4). I will always remember Peter's warmth and friendly nature, and his staunch support of South Australia's post-polio community.

We are also sad to be saying farewell to Helen Leach, who has worked tirelessly for Polio SA since being employed as their Community and Membership Officer in 2019. Helen utilised all of her considerable skills, experience and empathy to support Polio SA members through the passing of President, Brett Howard, followed by Covid-19, Board changes, and her own health issues.

We can often be overwhelmed with all the uncertainties the world throws up, which is why I believe Devalina's "Wellbeing For Polio Survivors And Carers" conference (page 5) is a timely reminder of the benefits of sharing experiences and finding ways to move forward. For those who can't attend, perhaps our [Fact Sheets](#) might be worth a read. Until next time. 🌟

Gillian

## From The Editor



**By Maryann Liethof**  
Editor

Welcome to the first edition of *Polio Oz News* for 2023! It's hard to believe that this is my 11th Volume, having launched this e-zine way back in June 2011. So much has happened over those years. If anyone is interested in taking a trip down memory lane, all editions are online [here](#). Something for posterity!

In this edition, our regular contributor on Nutrition, Melinda Overall, has written about the importance of protein in all our diets (P1). She has provided very clear guidelines and food charts to make it easy to follow.

The Team at Polio Australia have all provided updates on what they've been working on in support of the post-polio community. Our Community Development Worker, Devalina, is putting together a "Wellbeing For Polio Survivors And Carers" conference to be held in Preston, Victoria on April 29 (P5). This is in direct response to a grant we received specifying that the funds were to be spent in Victoria. Devalina has been working together with all the state-based Polio Networks to bring information to all Australian states, including providing regular on-line forums. Check her presentations [here](#).

Paulette Jackson, Administration Assistant, has shared Polio Australia's Exercise Guidelines resources (P6-7) for both polio survivors and their medical practitioners.

Michael Jackson, Clinical Educator, has included a piece discussing a wider focus on training workers in the Aged Care Sector on the Late Effects of Polio (P8). This is a joint campaign between Polio Australia and Spinal Life Australia, and has gained some media coverage in *The Courier Mail* (P9).

But that's not all...Michael has also been working on a screening tool to improve the clinical identification of polio survivors (P12). The flow chart can be downloaded on our website.

Another couple of conferences worth noting are the *ATSA Independent Living Expo* (P13), which is also being held in Melbourne, Victoria in May. Although they are regularly held across Australia—check details [here](#). The other is the *European Polio Conference* (P14), which is being held in Nancy, France from 25-27 May. So, if you've been looking for an excuse to head to Europe, maybe this is worth checking out!

It so happens, I am finally realising my 2020-booked European trip in April and May (not in France). This is a 'heads-up' that the next edition of *Polio Oz News* may be a little later than usual. Ciao for now! 🌟

Maryann



## Clinical Practice Workshops Update



**By Michael Jackson**  
Polio Australia Clinical  
Educator

It has been a quiet three months over the summer for workshops, but as usual it is a chance to make progress on other projects, recalibrate and review processes, and generate some resources.

Over 100 facilities and clinics have been contacted singularly in the last 60 days, informing them about our workshops and how to request or schedule one for their staff. Our annual update email to previous workshop attendees was opened by 421 of 807 recipients, showing at least 50% of our previous attendees remain engaged on the post-polio topic.

March is set to be busy with three trips planned for at least five workshops.

### Upcoming Workshops

- March 7th Palm Beach, QLD
- March 14th Zoom
- March 15th Little Bay, NSW
- March 22nd Macksville, NSW
- March 22nd Coffs Harbour, NSW (plus other pending locations that week)
- April 11th Zoom
- April 26th RMH-RPC Unit (plus other pre-conference locations that week)
- May/Jun/Jul/Aug Zoom
- Aug 25th Launceston, TAS (plus other pending locations that week)

We visited WA in November last year, but have many audiences to reach and re-engage with over a large geographic area. A follow up trip to WA is being planned for a second round of workshops — in the SW region and Perth hospitals/clinics. This will likely occur during May.

### Audience Engagement — Financial Year to Date

In 2022-23 we have already reached a wide geographic audience from numerous key health disciplines — those who would be a part of the multi-disciplinary teams working with polio survivors. Tasmania will be reached in August for the first time since the pandemic started.

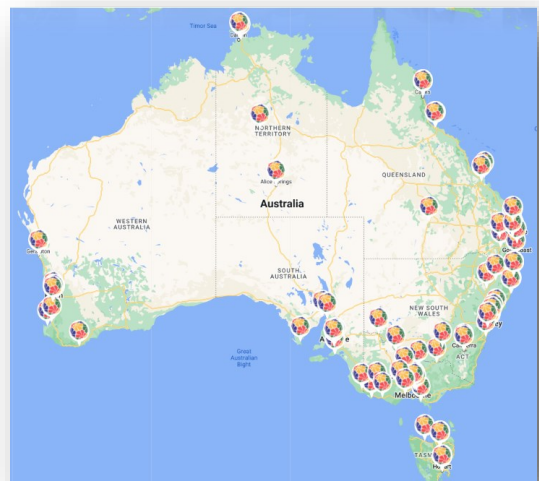
- 196 attendees covering all states except Tasmania
- 28 workshops (18 in-person, 3 remote, and 7 Zoom)
- Zoom workshop conversion rate = 50% from TryBooking registrations
- Workshop quiz has 97% pass rate; was taken by 51% of attendees
- Feedback was provided by 11% of attendees
- Feedback regarding “would you recommend” is 4.9 out of 5
- “Relevance to your practice” is 51% partially and 49% entirely

The Zoom workshop registrations tend to fluctuate in size, but the conversion is satisfactory with about half of those registering then attending the session. More often than not they have an existing or previous client, or family member connection with the topic of Polio.

Only half of all attendees take our workshop quiz, but they do so successfully. The reflects the backgrounds of the attendees (some are non-clinical, some are students) and the fact that some clinicians don't seek to obtain the CPD credit/certificate (it is available to them but not mandatory).

Feedback is challenging to obtain from a majority of attendees — taking the quiz is a big enough ask and is related to quiz motivation (i.e. session attendance is the primarily value/commitment). For those who do provide feedback, they report finding the content and topic relevant and almost all would recommend the workshop to other health professionals.

Generally speaking the workshops delivery is in good shape given the in-workshop comments and attendee engagement observed, but the low feedback volume may be biased towards positive responses. The feedback form has been modified (shortened) to make the feedback process faster/less burdensome for attendees. 🌟



On [this page](#) you can view the dates and locations of completed Workshops conducted by Polio Australia.

## Community Programs Update



**By Devalina Battacharjee**  
Community Development Worker

I hope everyone has had a pleasant 2023, thus far.

We have successfully conducted community information sessions in Geelong and Mornington Peninsula on the 16<sup>th</sup> and 11<sup>th</sup> of December and

February, respectively (thanks Gary and Fran!). While the aim of the Geelong session was to attract new members to join our existing community and spread awareness about Late Effects of Polio, bringing survivors and their carers into the fold that had hitherto been unaware of us and our efforts, the Mornington Peninsula session, however, was conducted for the pre-existing support group, to bring everyone up to speed on, "How to make the most of your healthcare team and self-management tips for LEOp."

Community information sessions are being planned for the various states, as we speak, with me visiting the Sunshine State at the end of March and the others to follow suit soon, so keep your eyes peeled for announcements in your local newspapers!

Plans are also in place for our next Melbourne seminar on, "Wellbeing for Polio Survivors and Carers", to take place on the 29<sup>th</sup> of April, from 11am till 2 pm at the Darebin Arts and Entertainment Centre. The topics covered will range from exercise tips for polio survivors and mental health improving strategies for survivors and their carers, to issues that carers face and tips on navigating them, with lunch being included.

This session is only meant for Victorian survivors, and we have had to limit the number of attendees to 50, so please hurry to secure your **free tickets** at:

[https://bit.ly/Melbourne\\_Seminar](https://bit.ly/Melbourne_Seminar)

Until next time, stay safe and warm! 🌞

2023 Victoria Conference  
**WELLBEING FOR POLIO SURVIVORS AND CARERS**

REGISTRATION LINK: [www.bit.ly/Melbourne\\_Seminar](http://www.bit.ly/Melbourne_Seminar)

**Polio Australia**  
Representing polio survivors throughout Australia

29 April 2023 | 11.00 AM - 2.00 PM  
Darebin Arts & Entertainment Centre  
Corner Bell St & St Georges Rd  
PRESTON VIC 3072

## Exercise And Late Effects Of Polio



**By Paulette Jackson**  
Administration Officer

Polio Australia has two exercise guideline resources — available for both clinicians and polio survivors.

Polio survivors must be cautious when exercising if they are experiencing late effects of polio. Exerting too hard can lead to extreme fatigue and pain. It is essential to receive guidance from a health professional with experience in post-polio conditions. If your health providers have not had this training, encourage them to request a **FREE** *Polio Survivors and Their Health Conditions* workshop via this link: <https://bit.ly/LEoPrequest>

Provide them with the following resource which is specifically geared toward clinicians:

### Exercising Muscle Groups with Giant Motor Units in the Presence of Partial Paralysis

#### Specific guidelines for exercise in those with Late Effects of Polio:

- Polio survivors should be encouraged to exercise to benefit their health.
- Exercise in post-polio patients should be prescribed and monitored.
- The expertise and guidance of LEOP-informed therapists should be used.
- Avoid LEOP fatigue and pain rollercoasters by careful prescription.
- When initiating exercise programs think: low-strain, slow, conservative.
- Assess safety (fall, fracture, temperature) in each exercise mode choice.
- LEOP weakness can be stabilised or slowed, but never normalised.
- The goal to articulate, is to “stabilise function” NOT to “get stronger”.
- Avoid unnecessary “extra” stress and strain on all muscle groups.
- Educate survivors on moderate consistent exercise and risks of disuse.

#### STRENGTHENING

- Any strength gains will emerge slowly; progress exercises gradually.
- Only exercise muscle groups that test as 3+ or greater out of 5.
- Fibre type, fibrosis, atrophy, and vasomotor tone affect muscle function.
- Low resistance (intensity), moderate repetitions, ensuring frequent rest.

#### CARDIOVASCULAR

- With whole body modes, exert only to the capacity of the weakest limb.
- Modes that support weaker limbs should be prioritised (e.g. aquatics).
- Shorter moderate bouts with rest (intervals) may be tolerated best.
- Environment and clothing planning help reduce heat loss after exercise.

#### JOINT RANGE AND MUSCLE LENGTH

- Stretching must appreciate surgical history and any limb bracing in use.
- Stretching can reduce pain, reduce asymmetry, and stabilise posture.
- Stretching intrinsically affects muscle control – this can present risks.

#### BALANCE AND CONTROL

- Skill and balance activities should adhere to the above constraints.
- Reducing fall risk using a multifaceted approach should be a priority.





## Exercise And Late Effects Of Polio (Cont'd from P6)

The second factsheet consists of the same exercise guidelines, but written for polio survivors experiencing late effects of polio and their families and carers. It is important that everyone involved in your usual activity understands your body's capabilities. Additional exercise resources can be found on our Living with Polio webpage: [www.polioaustralia.org.au/health-exercise](http://www.polioaustralia.org.au/health-exercise).

Exercise guidelines for polio survivors:

Polio Survivor Version

### Exercising Muscles with Giant Motor Units Where There is Partial Paralysis from Polio

#### Guidelines for exercise if you have Late Effects of Polio or Post-Polio Syndrome:

- 🌈 As a polio survivor you should exercise to get the physical and mental health benefits.
- 🌈 The exercise goal you focus on: *To keep moving and to be able to function as I get older.*
- 🌈 The exercises you do should be prescribed and monitored by an exercise professional.
- 🌈 The professional helping you should know about post-polio muscle paralysis and function.
- 🌈 Your post-polio weakness can be stabilised or slowed, but it can never be normalised.
- 🌈 The exercises you get should not make any of your fatigue, pain or weakness feel worse.
- 🌈 Think about the safety risks in each type of exercise you do (falls, fractures, getting cold).
- 🌈 When starting exercise programs think: low-stress, slow, careful and with enough rests.
- 🌈 When continuing exercise programs think: find a sweet spot that avoids worse symptoms.
- 🌈 Avoid 'extra' stress and strain on all muscle groups - in any activity you choose to do.
- 🌈 Mild exercise on a regular basis helps you to avoid being weak from not using muscles.

#### STRENGTHENING: Muscle power, how reliable muscles are

- Polio-affected muscles are very different: They work harder but slower, are smaller and have less fibres, they have less nerve cells firing them, and their blood supply may not be sufficient. These factors can be a part of your weakness, pain and fatigue symptoms.
- Use low weight (load), do low counts of quality repetitions, and take frequent rest breaks.
- If any strength gains are made, they will be slow and gradual (think months, not weeks).
- If told you have a muscle that is "less than a 4 out of 5" then use it but don't exercise it.

#### CARDIOVASCULAR: Fitness, your tolerance of repeating movements

- Fitness exercise uses multiple limbs or your whole body, so protect your weaker limbs.
- Fitness modes that support your weak limbs should be done if possible (e.g. aquatics).
- Land fitness modes should allow you to use any usual callipers or braces that you need.
- It may be a habit for you to over exert (too fast, too long or too much), so take it easy.
- Your body may get tired more quickly when exerting a low effort – respect your limits.
- Brief, mild to moderate efforts with rest breaks will help you to avoid getting too tired.
- Plan your exercise and clothing so you don't lose body heat after (by cooling too quickly).

#### STRETCHING: Joint movement and muscle length

- Stretching must respect your surgery history, weaknesses, and any limb bracing you use.
- Prescribed stretching can reduce pain, improve symmetry, and stabilise your posture.
- Stretching hard can affect how you sense muscles, and can make your mobility unsteady.

#### BALANCE AND CONTROL: Your ability to avoid falling

- Skill or balance activities of any type or for any reason should not worsen your symptoms.
- Reducing your fall risk is very important – the factors you work on are unique to you.



## Aged Care Sector Late Effects of Polio Training

**By Michael Jackson**

*Polio Australia Clinical Educator*

The Aged Care sector had 209,000 direct care workers in 2020, and this number has grown since. These workers are of an increasingly younger age compared to the 2016 workforce, and are less likely to have any experience or context of the polio epidemics era.

The majority (70%) of these workers are personal care workers (PCWs) who are relied upon as front-line carers. 66% of PCWs hold a Certificate III or higher in direct care. Given that many licensed professionals are unfamiliar with LEOp and its management, we do not expect PCWs to have a practical understanding of how to help those with LEOp. This can and has to change. For polio survivors utilising Aged Care, there is a remote chance they will encounter LEOp-informed caregivers.

Our workshop program has reached over 2000 clinicians in the last five years, but the vast majority of these were not working primarily in Aged Care. The density of AHPRA professionals educated face to face on Polio Survivors and Their Health Conditions rose from 1 in 588 in 2019, to 1 in 400 by 2023. In remote areas this can mean there is unlikely to be a clinician in any local communities who is LEOp-informed.

For a polio survivor, having a 1 in 400 chance of working with a LEOp-informed clinician is too low.

LEOp education improves clinical screening and care, and reduces client risks and clinical frustration.

Herein lies a significant problem: *How do we reach those workers (PCWs) who are most likely to be directly helping a polio survivor in residential and community Aged Care settings?*

The education already exists, and is available in several modes, including in-person workshops, online workshops, an on-demand eLearning module, and online print resources. The catch is, you have to first be aware of the condition and of the population experiencing it, to seek and obtain further education.

Currently a *Late Effects of Polio Awareness in Aged Care* campaign is underway — a project developed by Spinal Life Australia and Polio Australia. This campaign aims primarily to improve industry, organisational, and worker awareness of LEOp as a condition experienced by polio survivors ...who are **Still Here!**

The campaign targets leaders and facilities in health, and government representatives, but also community members who have a family member who survived polio utilising Aged Care services. Keep an eye out on social media, an ear on traditional news media for this campaign, and broadcast your own awareness of LEOp by calling or writing to your local government representatives. 🇦🇺



Donations and Bequests to Polio Australia help ensure that all polio survivors in Australia have access to appropriate health care and the support required to maintain independence and make informed life choices. Polio Australia is endorsed by the Australian Taxation Office as a Health Promotion Charity and a Deductible Gift Recipient making all Australian donations over \$2 tax deductible. Polio Australia will issue an official receipt for all donations received.





## The Legacy Of Polio

**The legacy of polio: Leading disability group calls for better care for polio survivors who may not even know they ever had the virus**

**By Shaye Windsor**

**Source:** [www.couriermail.com.au](http://www.couriermail.com.au)

— 24 February 2023

While polio has become a disease many Australians have long forgotten, its legacy remains for the estimated tens of thousands.

Leading disability groups are calling for better care for polio survivors as post-polio conditions leave thousands debilitated.

The polio epidemics in Australia peaked in the 1950s and left thousands of Australians permanently affected by the disease, before the country was declared polio-free over 20 years ago.

For those who survived, all are above the age of 50, and may be beginning to experience late effects of polio or post-polio syndrome, with most survivors eventually developing symptoms.

Some survivors may be unaware they ever had the virus prompting calls for improved support within the community and aged care facilities to recognise the conditions.

Polio survivor, Gillian Thomas, (*photo right*) was diagnosed at 10 months of age in 1950, and the polio virus paralysed both her legs and one arm.

*"I've got one arm that works of my four limbs, despite that I went to mainstream school and uni and worked and all the rest of it."*

Ms Thomas is the president of Polio Australia and received a Medal of the Order of Australia in 2020 for her advocacy to improve health outcomes for polio survivors in Australia.

In 2021, after late effects of polio weakened her "good" arm and decreased her mobility, her carer had an accident and was unable to provide Ms Thomas home care, forcing her into an aged care facility.

*"It was really the only option at that time and still is at the moment. I'm only just 73. So, it's really a bit of a shock to the system being in place like this,"* she said.

Ms Thomas said while the staff at the facility are very caring she has found herself educating them on the capabilities of a polio survivor with paralysis.

*"I probably can't go out and do the daily exercise routines that they run for the other residents,"* she said. *"We really need individualised treatment so that we're not doing*

*further damage to our motor neurons, which are already on the way out because they're ageing a bit faster than they should."*

Ms Thomas said that stigma around the virus at the time meant many children were not informed they had polio if it was non-paralytic, and later symptoms such as muscle weakness may not be recognised.

*"Those who know little of these conditions lead the polio survivors entrusted to their care to be very susceptible to mismanagement,"* she said. *"It's usually a mismatch of activity and ability expectations causing a worsening in symptoms and a heightened risk of falling."*

Spinal Life Australia has encouraged aged care facilities to take part in clinical workshops provided by Polio Australia, to improve the quality of care provided polio survivors.

CEO of Spinal Life Australia, Mark Townend, said advocating for polio survivors was important as aged care facilities start to see increasing numbers of residents presenting with post-polio symptoms.

*"It's so important that knowledge and awareness of post-polio conditions and the impacts are known to aged care facility operators, administrators, and staff, in order to better care for the survivors of this terrible disease,"* Mr Townend said. *"The best way to ensure polio survivors are receiving the best possible care is to raise awareness of post-polio conditions within the aged care sector, as aged care is often the only available support for those living with these conditions."*

[Spinal Life Australia](#) is a leading voice in the disability sector started over 60 years ago by a group of Brisbane residents living with paraplegia and quadriplegia. 🇦🇺



## Protein—What's All The Fuss? *(Cont'd from P1)*

*Table 1: Recommended dietary intake (RDI) - general population*

### Adults

Age	EAR	RDI
Men		
19-30 yr	52 g/day (0.68 g/kg)	64 g/day (0.84 g/kg)
31-50 yr	52 g/day (0.68 g/kg)	64 g/day (0.84 g/kg)
51-70 yr	52 g/day (0.68 g/kg)	64 g/day (0.84 g/kg)
>70 yr	65 g/day (0.86 g/kg)	81g/day (1.07 g/kg)
Women		
19-30 yr	37 g/day (0.60 g/kg)	46 g/day (0.75 g/kg)
31-50 yr	37 g/day (0.60 g/kg)	46 g/day (0.75 g/kg)
51-70 yr	37 g/day (0.60 g/kg)	46 g/day (0.75 g/kg)
>70 yr	46 g/day (0.75 g/kg)	57 g/day (0.94 g/kg)

(NHMRC, 2023)

I generally recommend that my clients consume higher than the RDI of protein and even more if they exercise a lot (between 1.2-1.8g per kg bodyweight per day). For polio survivors, I recommend between 1.8-2grams per kg bodyweight per day (about double the RDI) given their propensity to develop sarcopaenia and, in many cases, their limited mobility that reduces capacity to strengthen muscles:

*Table 2 — High Protein Foods / Approx. 100g raw*

Dairy Products		
Food	Serving Size	Protein (g)
Greek Yogurt	170g	18
Cottage cheese (1% fat)	113g	14
Cheddar cheese	25g	6.4
Full cream yoghurt	1 cup	11
Milk, full cream	1 cup	8.25
Milk, Skim	1 cup	9
Soy milk	1 cup	8

- If you are a 65kg female polio survivor, then aim for about 117g of protein per day (65x1.8);
- If you are an 80kg male polio survivor, then aim for about 160g of protein per day (80x2).

This might seem like a fairly low benchmark for protein if you think that you about eating a 100g fillet of fish or steak, but remember that fish generally provides about 22-25g of protein, while steak provides about 25-28g protein per 100g. One egg contains about 6g. The protein content can vary from food to food and the amount each person absorbs will differ too. It can be difficult to reach an optimal level of protein consumption so it important to start with small increases and work up. More foods high in protein are listed in Table 2.

It's important for you to ensure that your kidneys are working well for this level of protein intake (kidneys tend to carry the burden of cleaning up protein consumption). It is also helpful to start each day with protein in your breakfast, and to include protein with each meal and snack, so that you body has the opportunity to metabolise the protein properly.

Key to good nutrition is to vary your diet. This means it's a good idea to change up your protein sources. Rather than relying on meat, poultry and seafood/fish, consider other foods like dairy, nuts and seeds, legumes, tofu and tempeh (again see Table 2).

Another key note regarding protein consumption is that absorption of protein is enhanced by consuming it with a little carbohydrate. This is a fact often missed in recommendations to increase protein absorption [9]. Remember though, that improving protein absorption is not about growing bigger muscles but rather about trying to slow the risk and progression of sarcopaenia.

You might need to work with a properly qualified clinical nutritionist, dietitian or naturopath to develop a nutritionally sound diet that ensures nutritional adequacy with increased protein. 🌟

## Protein—What's All The Fuss? *(Cont'd from P10)*

<b>Meat, Poultry &amp; Seafood</b>		
<i>Food (Cooked)</i>	<i>Serving Size</i>	<i>Protein (g)</i>
Chicken, skinless	85g	28
Egg, 1 large	80g	6
Ham	85g	14
Lamb	85g	23
Lobster	85g	16
Pork	85g	22
Prawns	85g	20
Salmon	85g	22
Scallops	85g	14
Steak	85g	26
Tuna	85g	22
Turkey, roasted	85g	25
<b>Legumes, Grains, Vegetables</b>		
Adzuki Beans	½ cup	9
Black Beans	½ cup	8
Chickpeas	½ cup	7
Edamame	½ cup	9
Fava Beans	½ cup	7
Kamut	½ cup	6
Lentils	½ cup	9
Lima Beans	½ cup	6
Peas, green	½ cup	4
Pinto Beans	½ cup	11
Quinoa	½ cup	4
Red Kidney Beans	½ cup	8
Spinach, cooked	½ cup	3
Tofu, firm	100g	18

<b>Nuts &amp; Seeds</b>		
Almonds	30g	6.4
Cashews	30g	4.3
Chia Seeds	30g	5.4
Flax Seeds	30g	6.4
Peanut Butter, 1 Tbsp	20g	5.2
Peanuts	30g	7.5
Pistachios	30g	6.4
Pumpkin Seeds	30g	9.6
Soy Nuts	30g	12.9
Sunflower Seeds	30g	6.4
Walnuts	30g	4.3



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## LEoP Screening Challenges: False Negatives

By Michael Jackson

Polio Australia Clinical Educator

Identifying those who have been exposed to polio and who are at risk of developing post-polio conditions can be challenging, but it is a vital part of the health management process. Ideal screening for polio exposure requires a specific set of questions be asked, a clinical awareness of post-polio conditions, and astute, curious clinicians.

Often clinicians rely on a flow chart to help them with processes such as screening and decision-making. The process can be visual (when learning or reviewing it) or internalised (when it is fully understood). A flow chart is both topic and process specific, and shows a series of pathways following a logic based on condition-specific information.

With the insights of Dr Stephen de Graaff (Clinical Advisory Group, and Epworth Camberwell, Vic), we finalised a flow chart to improve the clinical identification of polio survivors. The chart only demonstrates the path from recognising a patient has syndrome-like signs and symptoms, through to actions taken in the case of a true positive or false negative for polio exposure. i.e. This is not a diagnostic flow chart — it is only to clarify exposure to polio.

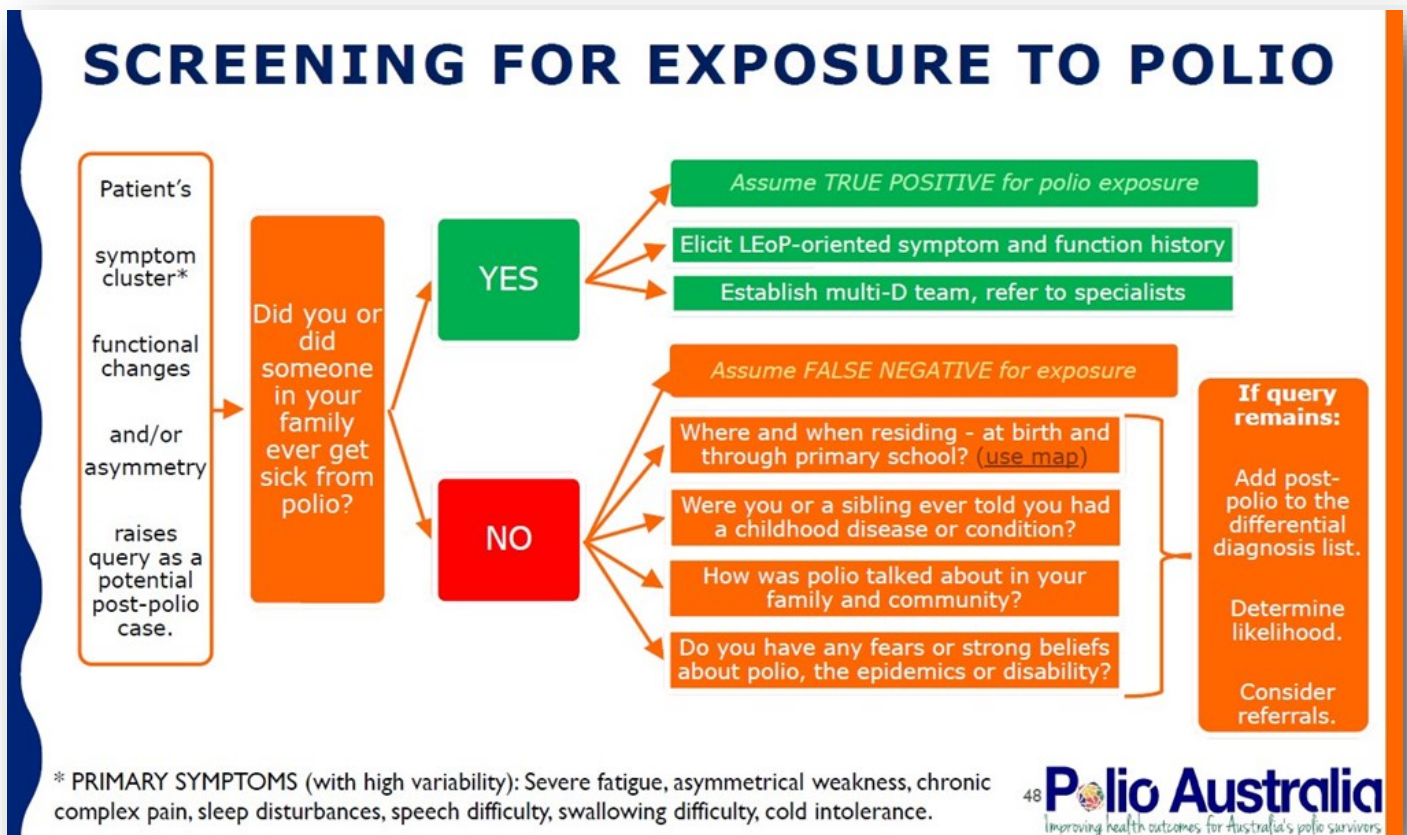


Chart can be downloaded here: <https://bit.ly/screeningLEoP>

The 'use map' refers to the polio cases map located at <https://bit.ly/AUSpolioEPIDEMICS>

Identifying those at risk of LEoP/PPS is straightforward when the person is asked — and then reports — that they had polio, i.e. they can provide some extent of evidence. In such a case their 'Yes' answer is assumed to be a *true positive*.

In opposition to the true positive on our flow chart is a *false negative*. This is where a person denies any exposure to polio, but who also may never have considered their exposure and had never been adequately screened. A clinician simply asking "Did you have polio?" is an insufficient screen for post-polio condition risk.

## LEoP Screening Challenges *(Cont'd from P12)*

The condition-specific information behind assuming a “No” is a false negative is both anecdotal and in published reports. Some examples of the false negative reports behind polio exposures are:

- My sibling had polio, but I only got the flu that week. (Polio infection can cause viral symptoms, subclinical nerve damage, and/or paralysis.);
- My parents told me I had been in a car accident and it had damaged my leg. (Parents did not want polio associated with their family.);
- I thought if I mentioned polio I would lose my residency. (Fear among immigrants that declaring a health condition would affect their visa.);
- We never talked about polio — it was forbidden in our home. (Parents were unable to cope with polio affecting a child, so banned the topic.);
- No one in our school got polio, but some other schools in town had it. (Most polio infections do not cause serious symptoms, yet spread easily.)

Similar to the polio cases map highlighted in the Summer 2022 Issue of PON, this flow chart is a tool which clinicians (particularly GPs and nurses) should utilise when assessing patients with syndrome-like symptoms and signs. Make a point of sharing this tool with your medical providers.

The end result of improved and effective screening — for any condition — is that a correct diagnosis can subsequently be made, a condition-matching treatment plan can be enacted, and anticipated health outcomes can be achieved. For those with a history of exposure to the polio virus, an earlier and a correct diagnosis can make a lot of difference. 🌟

## ATSA Independent Living Expo, Melbourne — bringing the world of AT to you this May



Do you need a compact power wheelchair? Looking for daily living aids or mobility devices? Searching for the latest in Assistive Technology for a client? Know someone who needs to update their lift chair, bed or commode? Don't know where to start with a vehicle modification?

Visit ATSA Independent Living Expo, Melbourne, 24-25 May where you will find solutions to all those challenges and more! Better yet, it's free to attend. There are anticipated to be more than 140 exhibitors displaying products and offering services to

cover many needs. View the full [Melbourne 2023 Exhibitor List](#).

In addition to the exciting innovation and new products on display this year, ATSA Independent Living Expo, Melbourne has a very strong seminar program, and for the first time an adaptive clothing fashion show too!

The diversity in the seminar program is set to be very engaging, from the practical to the informative there is something for everyone. If you need a refresher on what happens at the show and why it's too important to miss check out the [Highlights Gallery](#) or check out all the details for 2023 via our [website](#).

When you pre-register you receive free admission, a free coffee, access to so much education and the chance to try new products and network with others in the AT world. And for those in the industry, remember you can gain CPD points from attending.

**All sessions are free to attend — you just need to pre-register [here](#).** 🌟

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## Vale Peter Wierenga

### Friends and members of Polio SA



It is with sadness we learn of the passing of Peter Wierenga — our group's Treasurer, Board member and former Chairman. Peter also served on the Board of Polio Australia.

Peter gave many years of service to Polio SA, and in a moment of upset at the passing of Brett Howard, took control of things, and made sure our organisation stayed firm.

Many of us privileged to know Peter will remember his contribution to Polio SA — his wit, humor, and his gentle Canadian accent. Peter cared for his fellow man and showed love and understanding of those around him.

Others can tell of Peter — the husband, father and educator. We at Polio SA can vouch for the care and love he extended to all of us.

**From Ron Blackwell, Polio SA Committee Member**

Peter passed on 20th January 2023 after a battle with Multiple Myeloma.

We all extend our sincere condolences to Peter's family. If anyone would like to make a donation in memory of Peter, contact details for Multiple Myeloma Research are: The South Australian Health and Medical Research Institute (SAHMRI) / Website: <https://sahmri.org.au/donate> / Ph: (08) 8128 4000 / Email: [hello@sahmri.com](mailto:hello@sahmri.com)

Thank you, from the Polio SA Committee. 🌟

## European Polio Conference

Polio – A Congress to Build the Future!  
25-27 May 2023, Nancy, France

**Source:** <https://polioeradication.org/news-post/polio-a-congress-to-build-the-future/>

The European Polio Conference, organized by Polio-France in cooperation with the European Polio Union (EPU), will be held on 25-27 May in Nancy, France. Registration details and further information are available [here](#).



This congress will not be a congress like any other, with a learned society that addresses its colleagues. It will be organized by a patient association that wishes to create the necessary conditions for the exchange of knowledge in order to perpetuate its dissemination, but above all to motivate research and innovation in care.

This congress is aimed at people with polio and post-polio syndrome from all over the world, and health professionals concerned by the management of polio and post-polio syndrome. 🌟



## Rare Polio Case

**Rare polio case highlights how hard it will be to keep polio gone once it's eradicated**

**By Helen Branswell**

**Source:** [www.statnews.com](http://www.statnews.com) — 2 February 2023

An incident that took place at a Dutch polio vaccine production facility late last year is a critical reminder of a major challenge the world faces if and when polio eradication is completed: How do we keep polio from re-establishing itself, given that laboratories and vaccine manufacturers in numerous countries will need to continue to work with the viruses?

An employee of Bilthoven Biologicals in the Netherlands somehow became infected with type 3 polio, one of the two strains of polioviruses that have been eradicated. The company, owned by the Serum Institute of India, makes inactivated polio vaccines, using polioviruses that are killed in the production process.

The employee had been previously vaccinated and did not develop paralysis. But the person shed infectious polioviruses in his or her stool for weeks, posing a risk to others. The person lived in a part of the Netherlands where the vaccination rate for polio is less than 90%, exacerbating the risk.

The individual agreed to go into isolation in a special residence provided by the company, a period that lasted 33 days. The case was reported Thursday in the journal *Eurosurveillance*, which is published by the European Centre for Disease Prevention and Control.

The event was initially undetected; it only came to light when routine wastewater surveillance — which the country's national authority for containment of polioviruses requires be conducted around facilities that work with polioviruses — detected viruses in a sample collected on Nov. 15.

*"This event shows that incidents that lead to a breach of containment and even an infection can remain unnoticed and not reported if routine monitoring is not in place," the authors wrote. "We believe our environmental surveillance strategy has proven very valuable and strongly propose that other countries implement a similar system."*

The event — which involved a public health investigation, the testing of dozens of employees, and prolonged isolation of one of them — is a harbinger of the efforts and expense the world is going to have to undertake to ensure that polioviruses do not escape and resume transmission once eradication is achieved, said Kimberly Thompson, a polio expert who is president of the nonprofit organization Kid Risk.

*"Containment is a much bigger issue than people realize," Thompson told STAT. She noted the last known case of smallpox — the only human disease to date that has been eradicated — was in a British lab worker, before smallpox samples in laboratories were rounded up and destroyed.*

The viruses found in the sewage at Bilthoven had mutations that suggested they had been shed by an infected person, and had not been released into wastewater by accident, as happened at a GSK vaccine production facility in Belgium in 2014.

Fifty-one employees were identified as having had access to the type 3 viruses. All were asked to provide stool and blood samples. Blood testing showed that one person had signs of a recent infection; that individual's stool samples tested positive. None of the other employees tested positive. The paper gives no indication of how the individual became infected.

Because the vaccination rate where the individual lived was below 90%, it was proposed the person go into isolation in a specially designed residence owned by the company in a place where the vaccination rate was above that threshold. The person had to use a special toilet unconnected to the sewer system for the duration of the isolation and all potentially infectious waste materials from the stay were incinerated.

The individual, who spent Christmas and New Year's in isolation, was allowed to meet other people in outdoor settings, as long as there was no physical contact. The person was released from isolation after three consecutive stool samples tested negative.

The authors of the *Eurosurveillance* article noted the extended period during which the person shed polioviruses — 51 days — was unusual. They could detect no reason for it. But they found no evidence the individual infected anyone else, having tested stool samples from the people the individual was in close contact with in the period from Nov. 15 to Dec. 8, when the first positive test results came in.

A paper Thompson co-wrote in 2018 reported on six previous releases of eradicated polioviruses — types 2 and 3 have been eradicated — from vaccine production facilities.

*"Ongoing [inactivated polio vaccine] production and storage and use of [live polioviruses] in facilities will imply ongoing risks of potential future poliovirus infections and spread in populations," Thompson and her co-authors wrote in the article, published in the journal *Future Virology*. "Managing containment risks represents a critical component of the polio endgame and risk management efforts will increase prices for [vaccine] production."* 🌟

## nOPV2 Vaccine

### nOPV2: A new hope in battle against vaccine-derived polio

By R. Ramachandran

Source: [frontline.thehindu.com](https://www.frontline.thehindu.com) — 9 February 2023



*Photo: A child being given pulse polio drops, in Palakkad, Kerala, in 2022.  
Photo Credit: K.K. Mustafah*

The new vaccine will reduce the risk of vaccine-derived outbreaks of polio.

Live oral poliovirus vaccines (OPVs) are known to be safe and effective and have led to the elimination of polio from most of the world. However, in rare circumstances the attenuated viruses in OPVs can mutate and reacquire virulence. This can result in vaccine-associated paralytic polio and lead to the emergence of circulating vaccine-derived polioviruses (cVDPVs), particularly in settings with poor immunisation coverage.

Following the global eradication of wild-type 2 poliovirus, the risk of vaccine-associated paralytic polio and cVDPVs led to the global withdrawal of the type 2 virus from OPVs for routine use in April 2016, and only bivalent OPVs containing types 1 and 3 began to be used. Since this switch, only trivalent inactivated

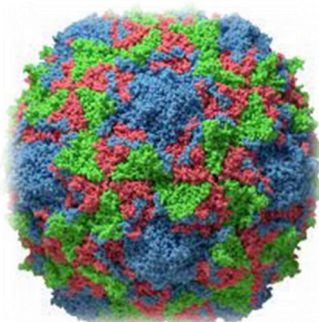
poliovirus vaccines (IPVs) have been used in routine immunisation campaigns against type 2 poliovirus.

However, though the routine use of live type 2 OPVs (OPV2) was stopped, type 2 cVDPV (cVDPV2) outbreaks occurred in many countries, resulting in cases of acute flaccid paralysis, which represent the majority of such polio cases worldwide.

Now, according to a report published in *The Lancet*, the results of a recent phase 2 trial in Bangladesh of a novel oral poliovirus vaccine type 2 (nOPV2) was found to be well tolerated among newborns and resulted in nearly all infants developing neutralising antibodies after two doses. The trial, conducted between September 21, 2020, and August 16, 2021, randomised 334 infants to receive either two doses of nOPV2 or a placebo, administered at age 0 to 3 days and at 4 weeks.

The authors noted that the novel vaccine is more genetically stable than Sabin OPV2s and, therefore, reduces the risk of cVDPV2, to which unvaccinated newborns are especially vulnerable. The nOPV2 vaccine had been studied in clinical trials of infants, children, adolescents, and adults who had already been vaccinated against polio. The current trial is the first to evaluate nOPV2 in newborns who have not received poliovirus vaccine. At birth, nearly all the infants, 93 per cent, had seroprotective antibodies against type 2 poliovirus that had transferred from their mothers. By eight weeks, only 56 per cent of the placebo group still had seroprotective maternal antibodies. In the nOPV2 group, the 90 per cent seroconversion rate from two doses of the vaccine resulted in 99 per cent of the infants having seroprotective antibodies at week 8. The authors reported that the vaccine was well-tolerated, causing mild or moderate adverse events. The amounts of virus the infants shed were low; at week 6, only 14 per cent of infants shed measurable virus, minimising the risk of a cVDPV2 outbreak.

More than 450 million doses of the vaccine have already been distributed to control cVDPV2 outbreaks, according to *The Lancet* paper. 🌐



## Truck Art To Be Used To Create Polio Awareness

By Ikram Junaidi

Source: [www.dawn.com](http://www.dawn.com) — 27 January 2023

**ISLAMABAD:** As trucks can be seen on roads and terrains, the Ministry of National Health Services (NHS) has decided to use them to create public awareness about polio.

In 2022, as many as 20 children were paralysed by the virus in the country — all belonging to the southern districts of Khyber Pakhtunkhwa (KP). Of these cases, 17 were reported from North Waziristan, two from Lakki Marwat and one from South Waziristan. Before these, not a single case was reported in Pakistan for almost 15 months.

An NHS ministry spokesperson, Sajid Shah, said Health Minister Abdul Qadir Patel had directed that trucks should be used throughout the country, especially in KP and those going to Afghanistan, to create awareness about the poliovirus.

*"Pakistan's truck art is famous across the globe and we are planning to use it to make the country polio free. All provincial languages will be used for the purpose,"* he said.

He said Mr Patel had directed that all available resources be used to eradicate the poliovirus.

The minister has also urged parents to ensure that their children would get vaccine during every campaign so that they would live a healthy life and do not become a reason for the spread of the virus.

Repeated immunisations have protected millions of children from polio, allowing almost all countries to become polio-free except the two endemic countries of Pakistan and Afghanistan. 🇵🇰





## Polio This Week

### Global Circulating Vaccine-derived Poliovirus (cVDPV) as of 21 of February 2023

	Country	AFP cases (Paralysis onset between 2020-2023)					Other sources (Human) <sup>2</sup> (Collection between 2020-2023)					Other sources (Environment) (Collection between 2020-2023)				
		2020	2021	2022	2023	Onset of most recent case	2020	2021	2022	2023	most recent collection date	2020	2021	2022	2023	most recent collection date
cVDPV1 <sup>1</sup>	Madagascar	2	13	14		22-Dec-22		25	11		26-Dec-22		31	96		21-Nov-22
	DR Congo			92		16-Dec-22			4		24-Sep-22					
	Malawi			4		01-Dec-22			1		19-Sep-22					
	Mozambique	1		21		20-Nov-22			1		25-Oct-22					
	Yemen	31	3			27-Mar-21					07-Jul-19					
	Malaysia	1				14-Jan-20						9				13-Mar-20
Total type 1		35	16	131	0		0	25	17			9	31	96		
cVDPV2 <sup>1</sup>	Indonesia			1	2	13-Jan-23			3		11-Nov-22					
	Algeria			3		13-Dec-22			2	3	05-Jan-23			18	2	09-Jan-23
	Nigeria	8	415	47	1	01-Jan-23	8	204	28		18-Aug-22	5	303	82		09-Dec-22
	Central African Republic	4		5		26-Dec-22	1				05-Oct-20	2	1	8		23-Nov-22
	Benin	3	3	10		09-Oct-22		2	1		01-Jun-22	5	1	8		20-Dec-22
	Yemen		66	161		14-Dec-22		17	32		02-Aug-22		13	25		28-Nov-22
	Botswana													3		13-Dec-22
	DR Congo	81	28	287		10-Dec-22	95	6	29		04-Dec-22	1	3	8		05-Dec-22
	Zambia													3		06-Dec-22
	Sudan	58		1		31-Oct-22	11				01-Oct-20	14		1		28-Nov-22
	Chad	101		43		11-Nov-22	17		4		24-Nov-22	3	1	4		02-Nov-22
	Cameroon	7	3	2		30-Oct-22	4	3			29-Oct-21	9	1			25-Oct-21
	Niger	10	18	14		27-Oct-22	2	1	3		19-May-22	9		14		17-Oct-22
	Mali	52		1		26-Oct-22	3				15-Aug-20	4				29-Aug-20
	Ghana	12		3		14-Sep-22	10		4		01-Jun-22	20		19		04-Oct-22
	Togo	9		2		30-Sep-22	9				09-Jul-20			2		06-Sep-22
	United States of America			1		20-Jun-22								12		22-Sep-22
	Canada													2		08-Sep-22
	Somalia	14	1	5		23-Aug-22	13		4		31-Aug-22	26	1	4		28-Aug-22
	Egypt											1	12	6		29-Aug-22
	Côte d'Ivoire	64				18-Oct-20	25				01-Nov-20	95		3		18-Jul-22
	Israel													1		16-Jun-22
	United Kingdom													3		31-May-22
	Djibouti													7	12	22-May-22
	Ethiopia	37	10	1		01-Apr-22	7				13-Oct-20	4				28-Dec-20
	Mozambique		2	4		26-Mar-22					17-Dec-18					
	Eritrea		1	1		02-Mar-22										
	Senegal		17			27-Oct-21		34			17-Nov-21	1	14	1		17-Jan-22
	Burkina Faso	68	2			09-Jun-21	12				19-Sep-20		1			28-Dec-21
	Ukraine		2			24-Dec-21		18			09-Oct-21					
	Mauritania							4			19-Jul-21		7			15-Dec-21
	Uganda												2			02-Nov-21
	Gambia												9			09-Sep-21
	Pakistan	135	8			23-Apr-21	2				11-Nov-20	135	35			13-Aug-21
	Guinea	44	6			01-Apr-21	1				05-Sep-20	1	2			11-Aug-21
	Guinea-Bissau		3			15-Jul-21		1			26-Jul-21					03-Aug-21
	Tajikistan	1	35			25-Jul-21		22			24-May-21		17			22-Mar-21
	Afghanistan	308	43			09-Jul-21	36	2			03-May-21	175	40			23-Jun-21
	Congo	2	2			10-Feb-21	2				12-Oct-20	1	3			01-Jun-21
	Sierra Leone	10	5			28-Feb-21	6	8			19-Mar-21		9			01-Jun-21
	Liberia		3			28-May-21	2	5			21-Jan-21	7	14			20-Apr-21
	South Sudan	50	9			10-Apr-21	19	5			25-Feb-21	6				01-Dec-20
	Iran											3	1			20-Feb-21
	Kenya						1	2			25-Jan-21	1	1			13-Jan-21
	Angola	3				09-Feb-20					31-Oct-19					02-Dec-19
	Malaysia											5				04-Feb-20
	Philippines	1				15-Jan-20					23-Nov-19	4				16-Jan-20
Total type 2		1082	682	592	3		286	334	110	3		537	498	239	2	
cVDPV3 <sup>1</sup>	Israel			1					3		24-Mar-22	1	5	25		15-Mar-22
	Occupied Palestinian Terr.												7	9		12-Mar-22
	China						1				22-Jul-20		1			25-Jan-21
Total type 3		0	0	1	0		1	0	3			1	13	34		
Gender	Female (all sero type)	493	295	301												
	Male (all sero type)	610	400	412	3											
	Gender Unknown	10	3	11												

Environmental surveillance for poliovirus in selected sewage sites established and working

Changes from previous week

### Summary of new polioviruses this week:

- Afghanistan: two WPV1 positive environmental samples
- Algeria: two cVDPV2 positive environmental samples
- DRC: four cVDPV2 cases
- Madagascar: one cVDPV1 case and eight positive environmental samples
- Mozambique: two cVDPV1 cases
- Yemen: one cVDPV2 case and five positive environmental samples