

Road To Recovery

Covid-19 Long Haul

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COVID-19



Post Covid- **PASC** Post Acute
Sequelae of SARS-COV2 Infection



COVID for those who didn't have
COVID- Isolation, socialization,
decreased mobility, decreased
stimulation, fear.



Think of COVID-19 as a new Past Medical History (PMH) that we should be reviewing



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A.B.

K.K.

E.L.

A.M

K.T.

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CDC data 3.14.22

- Confirmed Covid Cases in a state, in the US, and Global.

Ohio cases

Updated Mar 14 at 8:29 AM local

Confirmed
2,663,835

+317

Deaths
37,410

Recovered
-

See breakdown



United States cases

Updated Mar 14 at 8:29 AM local

Confirmed
79,517,492

+62,572

Deaths
967,552

+1,334

Recovered
-

See breakdown



Global cases

Updated Mar 14 at 8:29 AM local

Confirmed
456,790,241

+3,363,965

Deaths
6,040,665

+10,876

Recovered
-

So how many people have post Covid?

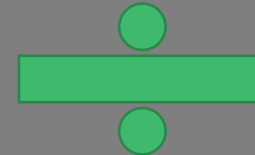
So let's do some math....

5

According to the AMA article 'What Doctors Wish Patients Knew About Long Covid' anywhere between 10-30% of patients may experience long haulers- EVEN if they had mild symptoms.



As of July 2021, "long COVID," also known as post-COVID conditions, can be considered a disability under the Americans with Disabilities Act (ADA).



: [Guidance on "Long COVID" as a Disability Under the ADA, Section | HHS.gov](#)external icon

An estimated 35% of those with Covid Long Haulers may be considered disabled under this new consideration.



As of March 14, 2022

79,517,492*** US Citizens with a
Covid-19 Diagnosis

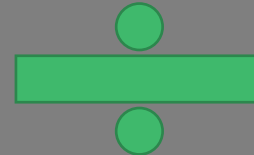
***that we know of

30% → 23,855,247

35% of that → 8,349,336

So let's do some math....

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Post COVID

- Systems impacted according to the CDC

Body System	Conditions (subject to change and not mutually exclusive)
Cardiovascular	Myocarditis, heart failure, pericarditis, orthostatic intolerance (e.g., postural orthostatic tachycardia syndrome [POTS])
Pulmonary	Interstitial lung disease, reactive airway disease
Renal	Chronic kidney disease
Dermatologic	Alopecia
Rheumatologic	Reactive arthritis, fibromyalgia, connective tissue disease
Endocrine	Diabetes mellitus, hypothyroidism
Neurologic	Transient ischemic attack/stroke, olfactory and gustatory dysfunction, sleep dysregulation, altered cognition, memory impairment, headache, weakness, neuropathy
Psychiatric	Depression, anxiety, post-traumatic stress disorder (PTSD), psychosis
Hematologic	Pulmonary embolism, arterial thrombosis, venous thromboembolism, other hypercoagulability
Urologic	Incontinence, sexual dysfunction
Other	Weight loss, dysautonomia, allergies and mast cell activation syndrome, reactivation of other viruses, pain syndromes, hearing loss, vertigo, and progression of comorbid conditions

Common Post-COVID Symptoms

- Dyspnea or increased respiratory effort
- Fatigue
- Post-exertional malaise
- “Brain fog,” cognitive impairment
- Cough
- Chest pain
- Headache
- Palpitations and/or tachycardia
- Arthralgia
- Myalgia
- Paresthesia
- Abdominal pain
- Diarrhea
- Insomnia and other sleep difficulties
- Fever
- Lightheadedness
- Impaired daily function and mobility
- Pain
- Rash (e.g., urticaria)
- Mood changes
- Anosmia or dysgeusia
- Menstrual cycle irregularities

Common Post-Covid Symptoms

COVID-19 When you never had COVID...

Isolation:

- Higher risk of mortality.
- Physical and Mental health.
- Cognitive Decline.
- Increased risk of Dementia.
- Long Term illness.
- Depression.
- High Blood Pressure.
- Negative outlook.
- Risky Health behaviors.
- Impair sleep.
- Increase stress.

Lack of Socialization:

- Poor self esteem
- Depression
- Loss of Reality
- Increased Tumor Risk
- Decreased Ability to learn
- Decrease sense of Apathy
- Inflammation
- Shorter Life Span
- Increased Risk of Dementia
- Reduced Resilience
- Body Chills

Mobility/Fear:

- Decreased mobility
- Lost Strength/ROM/Functional Mobility
- Decreased Endurance
- Falls
- Fear:
 - To reach out
 - Meet basic needs
 - To see loved ones
 - Complete yearly needed medical appts.
 - To talk about what they are experiencing

COVID- When you have never had COVID

- Decreased mobility- KHN.org
 - Are we talking about the large number of older adults who have become physically and cognitively debilitated during the 15-month shelter in place?
 - No Large-Scale studies to document the extent of this
- Lost Strength/ROM/Functional Mobility
- Decreased Endurance
- Falls
- How many cases are similar? 90-year-old who was independent in the AL prior to Pandemic-Now wheelchair bound.

COVID – When you have never had COVID

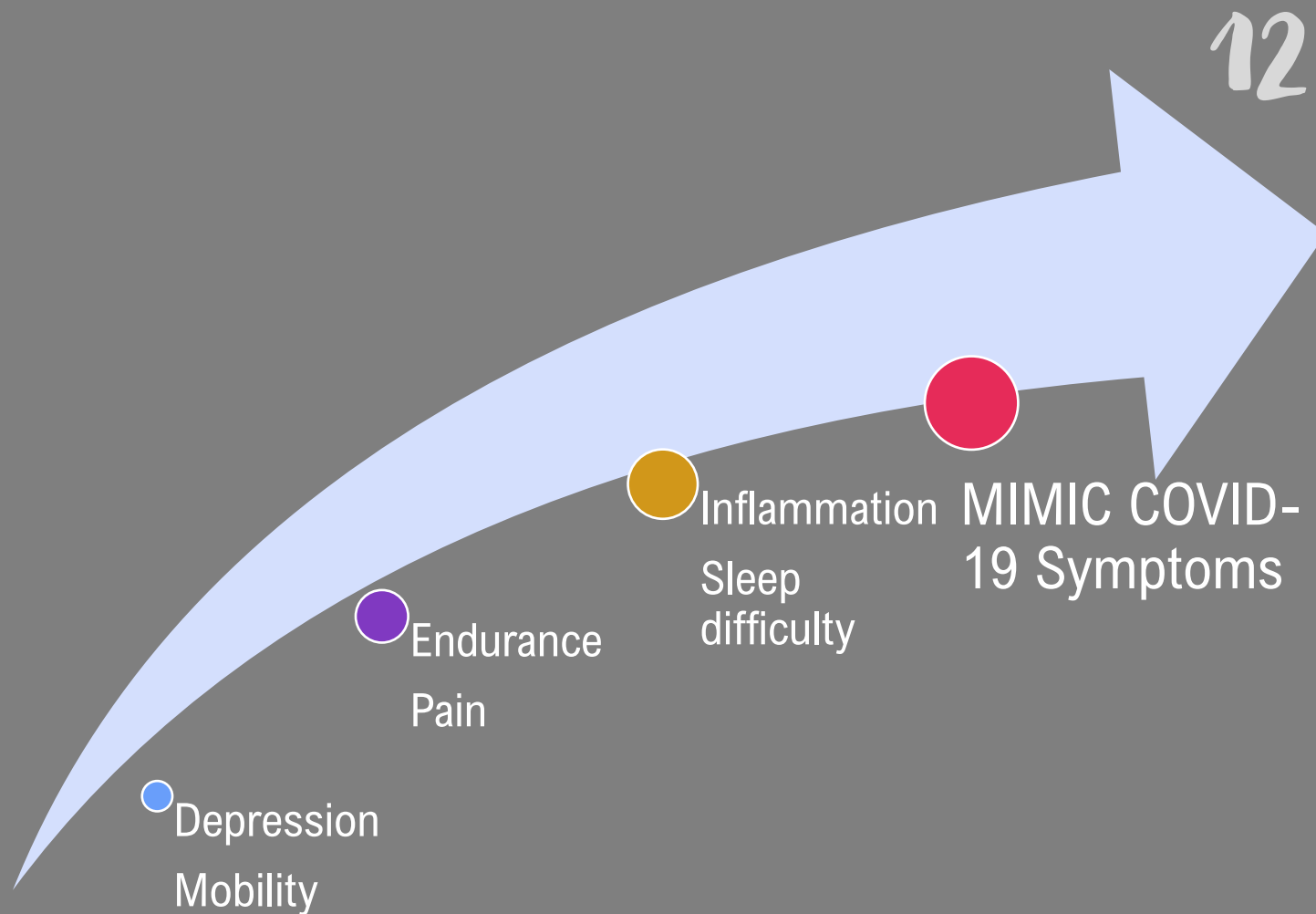
- Post COVID? Or Post Isolation?
 - Depression
 - Decreased Mobility
 - Endurance
 - Pain
 - Inflammation
 - Sleep difficulty

COVID-19

When you never had COVID...

Isolation and
Lack of
Socialization
mimic Post
Covid....

Same symptoms



COVID-19 as a PMH

- How was your patient functioning and improving pre covid?
- What were you focusing on during COVID?
 - Survival mode?
- What aspect could one have missed because there was a soul focused on COVID?
- The typical items to look at pre and post Covid:
 - Falls
 - Illness pre covid
 - Behavior changes
 - Mobility changes

Now what are you missing since you only focused on Covid?

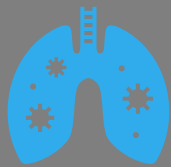
Depression

- PHQ-9
- BIMs
- Depression Scale



The Missing Piece in your assessment

You didn't notice until you noticed... now
how do you move forward?



“ Covid-19 Targets multiple organ systems, preferentially affects older adults with multimorbidity, and leads to long-term sequelae including geriatric syndromes of cognitive and functional impairment with the resulting need for rehab.”

- COVID-19: A Call for Mobilizing Geriatric Expertise
 - Gerontological Pandemic, with Frailty, Multimorbidity and geriatric syndromes being of great importance.
 - “the pandemic has shown that medical education and health systems have failed to align training, resources, and systems with current demographic and health usage realities”
 - Message: “We must take the specific needs of older people into account to position ourselves to provide better care for this group during Covid-19 and beyond”
 - Holistic. Age Informed.



**Didn't they
need Rehab
before
COVID??**

COVID-19 as a PMH-



Do you ask in-depth questions about the symptoms they experienced while COVID positive? After COVID?

Is your TKR no longer just a TKR since Covid-19 is a PMH? Blood clots, Resp issues, Depression?

Is the Individual different now post COVID diagnosis?

ASSESSMENT

- TOTAL KNEE? “Typical”
 - How does this look different with a PMH of COVID 19?
 - Look at Heart? Monitor closer for Blood Clots?
- TOTAL Body Care
- Lungs- post COVID PMH? Especially after surgery?



COVID-19 as a PMH- Are you asking these questions?

Dyspnea

Fatigue

Poor Endurance

Cough

Brain Fog

Chest Pain

Palpitations

Arthralgia (Joint pain)

Myalgia (Pain in a muscle)

Paresthesia (pins/needles sensation)

Abdominal Pain

Diarrhea

Insomnia/other
sleep difficulties

Fever

Lightheadedness

Impaired daily
function

Pain

Rash

Mood Changes

Anosmia (Loss
of smell)

Dysgeusia
(altered taste)

Menstrual cycle
irregularities

COVID-19 as a PMH- Are you asking the right questions?

Dyspnea

Fatigue

Poor Endurance

Cough

Brain Fog

Chest Pain

Palpitations

Are you asking these items Pre and Post COVID? Asking if the presence is NEW?

Loss

Impaired daily function

Insomnia/other sleep difficulties

Fever

Pain

Rash

Changes

Anosmia (Loss of smell)

Dysgeusia (altered taste)

Menstrual cycle irregularities

Anosmia (Loss of smell)

PAROSMIA



- "Everything smells rancid"
- "Could last Months"
- Do you LOVE Peanut Butter??
- Published review from the Mayo Clinic (NATURE) data from 8,438 individuals diagnosed with COVID → 41% lost their sense of smell.
- But how many had a change in their smell?

TINNITUS

- Cohen Medical Association: Tinnitus can be a ringing in the ears, a roaring, clicking, hissing or buzzing. It can be in one or both ears.
- International Journal of Audiology: 15% of those infected experienced post Covid 19 Tinnitus.
- "UNBEARABLE Covid Related symptoms including severe tinnitus"

How do these impact your practice?

DEPRESSION/ANXIETY

- BIMs/PHQ9/CAM
- What does this tell you?
- Pre-Pandemic according to a study from 2014 in Journal of Catholic Health Association in the United States 20% of all Nursing home residents had Major Depression
- Additional 30% had depressive symptoms
- PRE-PANDEMIC!

Risk/Benefit Analysis is critical! Look at the whole person. Pharmacological intervention? Nonpharmacological- activities, self determined programs. Array of different therapies.

PRIOR LEVEL *of* FUNCTION

- Pre-covid?
- Function prior to being Isolated
- Function since Covid-19 Diagnosis

What is the PLOF your individual wants to return to?

Loneliness, Isolation, and Social Support Factors in Post COVID 19 Mental Health

- Social Support is a strong predictor of resilience following disasters and post traumatic growth following exposure to trauma and disasters.
- “The sudden tragedy of the attacks led individuals to consider their own mortality and, in order to manage this unexpected fear, revert to their known support systems. Further the shared experience of social distancing may be a protective factor towards more experiential types of loneliness, but individuals with preexisting traumatic experiences or unresolved grief may be particularly vulnerable.”
- Note- these finding did not account for mental health concerns, financial/household/and family strain that would also have an impact.

*Post Acute
COVID 19
syndrome
article-
incidents and
risk factors:
A
Mediterranean
Cohort study.*

Post Acute Covid-19 Syndrome was detected in half of COVID19 Survivors.

Radiological and Spirometric changes were observed

Need for Follow up plans noted

A. CAA Results		
Care Area	A. Care Area Triggered	B. Care Planning Decision
	↓ Check all that apply ↓	
01. Delirium ★	<input type="checkbox"/>	<input type="checkbox"/>
02. Cognitive Loss/Dementia	<input type="checkbox"/>	<input type="checkbox"/>
03. Visual Function	<input type="checkbox"/>	<input type="checkbox"/>
04. Communication	<input type="checkbox"/>	<input type="checkbox"/>
05. ADL Functional/Rehabilitation Potential ★	<input type="checkbox"/>	<input type="checkbox"/>
06. Urinary Incontinence and Indwelling Catheter	<input type="checkbox"/>	<input type="checkbox"/>
07. Psychosocial Well-Being ★ ★	<input type="checkbox"/>	<input type="checkbox"/>
08. Mood State ★ ★	<input type="checkbox"/>	<input type="checkbox"/>
09. Behavioral Symptoms ★ ★	<input type="checkbox"/>	<input type="checkbox"/>
10. Activities	<input type="checkbox"/>	<input type="checkbox"/>
11. Falls ★	<input type="checkbox"/>	<input type="checkbox"/>
12. Nutritional Status ★	<input type="checkbox"/>	<input type="checkbox"/>
13. Feeding Tube	<input type="checkbox"/>	<input type="checkbox"/>
14. Dehydration/Fluid Maintenance	<input type="checkbox"/>	<input type="checkbox"/>
15. Dental Care	<input type="checkbox"/>	<input type="checkbox"/>
16. Pressure Ulcer	<input type="checkbox"/>	<input type="checkbox"/>
17. Psychotropic Drug Use	<input type="checkbox"/>	<input type="checkbox"/>
18. Physical Restraints ★	<input type="checkbox"/>	<input type="checkbox"/>
19. Pain	<input type="checkbox"/>	<input type="checkbox"/>
20. Return to Community Referral	<input type="checkbox"/>	<input type="checkbox"/>

FOR SNF
friends!

Care Area Assessments- 20 Items!



Do we look at these
with a more detailed
eye now??

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Will You Add Extra Assessments?

CDC Category recommendations:

- Psychiatric Conditions:
 - General Anxiety Disorder-7 (GAD-7)
 - Patient Health Questionnaire-9 (PHQ-9)
 - PTSD Symptom Scale
 - Hospital Anxiety and Depression Scale (HADS)
- Other Conditions
 - Fatigue Severity Scale
 - Insomnia Index (ISI)

Will You Add Extra Assessments?

CDC Category recommendations:

- Exercise Capacity
 - 1-minute sit-to-stand test
 - 2-minute step test
 - 10-meter walk test (10MWT)
 - 6-minute walk
- Balance and Fall Risk
 - BERG Balance Scale
 - Tinetti Gait and Balance Assessment Tool
- Other
 - Tilt-table testing (for POTS postural orthostatic tachycardia syndrome)
 - Orthostatic HR Assessment



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Will You Add Extra Assessments?

CDC Category recommendations:

- Functional Status/QOL:
 - Post Covid 19 Functional Status Scale (PCFS)
 - Patient-Reported Outcomes Measurement Information System (PROMIS)
- Respiratory Conditions
 - Modified Medical Research Council Dyspnea Scale (mMRC)
- Neurological Conditions
 - Montreal Cognitive Assessment (MoCA)
 - Mini Mental Status Examination (MMSE)

Will you request extra labs? Or scrutinize labs differently?

CDC recommends the following when distinguishing Post Covid:

Blood count, electrolytes, renal function
Liver Function
Inflammatory Markers
Thyroid Function
Vitamin Deficiencies

Are these important to your clinic? Your SNF? Your Practice?



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CASE STUDY #1

26

40-year-old previous marathon runner- Physical Therapist.

Dyspnea, Headache, Cognitive “fog”

Poor tolerance for activity

Exercise capacity 50% of age predict on 6 min walk test.

Sent for a work hardening program



CASE STUDY #2

27

62 y.o. Female

New onset of foot drop

Muscle strength Bilateral LE 3+/5

L Foot- Ankle Dorsiflexion, Toe extension, and ankle evertors all 2+/5

MD “questioning MS”

All imaging normal

Deficits are now being called Post-Covid related.

PHQ-9 Mild Depression noted



Will You Add Extra Assessments?

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How will you put these into practice?

Will You Add Extra Assessments?

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- Functional Status/QOL:
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 - Patient-Reported Outcomes Measurement Information System (PROMIS)
- Respiratory Conditions
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- Neurological Conditions
 - Montreal Cognitive Assessment (MoCA)
 - Mini Mental Status Examination (MMSE)



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- COVID-19 has changed the Healthcare industry. We move forward by ensuring comprehensive care for our clients, accounting for COVID-19 as a Past Medical History.

Road to Recovery



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CDC

Covid's Toll on Smell and Taste, NATURE. Volume 589 January 2021

CMS

AMA

