Not Just a Women's Health Problem

Alyson J. McGregor MD
Male Mortality

- Wuhan, China: ¾ hospitalized
- Lombardy, Italy: 82% ICU
- NYC: male mortality all ages
Figure 2: Distribution by age and sex of confirmed COVID-19 cases reported to the WHO case-based surveillance system to date.

Source: COVID-19 global surveillance database
Across 179 countries, how many have reported sex-disaggregated COVID-19 data?

- Testing: 8 countries
- Confirmed cases: 125 countries
- Hospitalisations: 18 countries
- ICU admissions: 11 countries
- Deaths: 88 countries
ICU admissions by sex for various countries:

- Norway
- Greece
- France
- Sweden
- Scotland
- Spain
- Denmark
- Finland
- Canada
- USA
- Chile

The chart shows the percentage of ICU admissions for males and females in each country.
USA Deaths by Age and Sex
SARS CoV-2
Spike Protein
ACE-2 R
TMPRSS2
Hormone Action

Androgens

**Advantages**
- Increases muscle activity
- Improve lung capacity

**Disadvantages**
- Upregulate TMPRSS2
- Male Pattern Baldness
  - Spain April 71%
Prostate Cancer Research
Androgen-Deprivation Therapy

A protective treatment?

In one Italian study, men with prostate cancer who received drugs that suppress androgens were much less likely to be infected with SARS-CoV-2.

<table>
<thead>
<tr>
<th>Total men with prostate cancer</th>
<th>Men on androgen-deprivation therapy (ADT)</th>
<th>Men not on ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5273</td>
<td>37,161</td>
</tr>
</tbody>
</table>

Number infected with SARS-CoV-2

<table>
<thead>
<tr>
<th></th>
<th>Men on ADT</th>
<th>Men not on ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td>114</td>
</tr>
</tbody>
</table>

Estimated cases per 10,000

<table>
<thead>
<tr>
<th></th>
<th>Men on ADT</th>
<th>Men not on ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>

Clinical Manifestations

- Cough
- Fever
- Anosmia
- Dysgeusia
- Fatigue
- Headache

Asymptomatic – Respiratory Distress – MSOF – Death
Effect of Hydroxychloroquine in Hospitalized Patients with Covid-19

The RECOVERY Collaborative Group*

ACTT-1 Study Group Members®
Dexamethasone

ACTT-1 Study Group Members®
Convalescent Plasma Donation
A Comparison Study of SARS-CoV-2 IgG Antibody Between Male and Female COVID-19 Patients: A possible reason underlying different outcome between sex.

Vaccination

Exploratory, Pre-clinical Trials, NDA, 4 Phases Clinical Trials

Approval: CDC & FDA
Vaccination

Genetics, Environment, Race, Age, Nutrition, Microbiome, Sex
Sex Differences in Vaccine-Induced Humoral Immunity

- Higher Magnitude Immune Response
- Lower Hospitalization and Mortality
- More Severe Adverse Events
Prone Positioning for Refractory Hypoxemia
Contact Pressure (cmH₂O)

Supine

Prone without support

Prone with support

Chiumello et al., 2006 https://www.ncbi.nlm.nih.gov/pubmed/16764731
Anthropometric Designs
Sociocultural Behavior
Do you really want to shake that hand?

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT Wash</td>
<td>15-69%</td>
<td>7%</td>
</tr>
<tr>
<td>NO Soap</td>
<td>35%</td>
<td>15%</td>
</tr>
</tbody>
</table>
The Condoms of the Face: Why Some Men Refuse to Wear Masks

It’s not the first time masculine ideology has driven resistance to a public health initiative.
“Super-Spreaders”
Account for gender/sex to make personal protective equipment safer for women

By Saralyn Mark

June 19, 2020
Facemask Do’s and Don’ts
For Healthcare Personnel

When putting on a facemask
Clean your hands and put on your facemask so it fully covers your mouth and nose.

Do ensure the elastic bands around your ears.
Do ensure the ties at the middle of your head and the base of your head.

When wearing a facemask, don’t do the following:

DON’T wear your facemask under your nose or mouth.
DON’T allow a strap to hang down. DON’T cross the straps.
DON’T touch or adjust your facemask without cleaning your hands before and after.
DON’T wear your facemask on your head.
DON’T wear your facemask around your neck.
DON’T remove your facemask around your ears.

When removing a facemask
Clean your hands and remove your facemask touching only the straps or ties.

Do lower the patient care area, then clean your hands with alcohol-based hand solution or soap and water.
Do remove your facemask following CDC’s instructions, “inside-out,” and clean your hands again.

Respirator On / Respirator Off

When you put on a disposable respirator
Position your respirator correctly and check the seal to protect yourself from COVID-19.

Close the respirator in your hand.
Hold the respirator under your chin with the nosepiece up. The top strap (or single or double strap respirator) goes over the bridge of your nose. The bottom strap is positioned around the neck and below the ears.

When you put on a disposable respirator

Do not use a respirator that appears dirty, torn or deformed, or no longer forms an effective seal at the face, becomes wet or visibly dirty, or if breathing becomes difficult.
Do not allow facial hair, jewelry, glasses, beards or anything else to prevent proper placement or to come between your face and the respirator.
Do not cris-cross the straps.
Do not wear a respirator that does not have a proper seal if air leaks in or out. Ask for help or try a different size or model.
Do not touch the front of the respirator during or after use. It may be contaminated.

When you take off a disposable respirator

Remove by pulling the bottom strap over back of head. Follow the bagging the respirator.
Discard in a waste container.
Clean your hands with alcohol-based hand sanitizer or soap and water.

Employees must comply with the OSHA Respiratory Protection Standard, 29 CFR 1910.134, which includes medical evaluations, training, and fit testing.

Additional information is available about how to safely put on and remove personal protective equipment, including facemasks:

Additional information is available about how to safely put on and remove personal protective equipment.

cdc.gov/coronavirus
COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel

**Preferred PPE – Use**  
N95 or Higher Respirator

- Face shield or goggles
- N95 or higher respirator
- When respirators are not available, use the best available alternative, like a facemask.
- One pair of clean, non-sterile gloves
- Isolation gown

**Acceptable Alternative PPE – Use**  
Facemask

- Face shield or goggles
- Facemask
- N95 or higher respirators are preferred but facemasks are a acceptable alternative.
- One pair of clean, non-sterile gloves
- Isolation gown

[cdc.gov/COVID19](https://www.cdc.gov/COVID19)
Facial Hairstyles and Filtering Facepiece Respirators

Intended for workers who wear tight-fitting respirators

- Clean Shaven
- Stubble
- Long Stubble
- Full Beard
- French Fork
- Ducktail
- Verdi
- Garibaldi
- Bandholz
- Soul Patch
- Goatee
- Chin Curtain
- Extended Goatee
- Circle Beard
- Anchor
- Balbo
- Van Dyke
- Imperial
- Side Whiskers
- Mutton Chops
- Hulhée
- Horseshoe
- Zappa
- Walrus
- Painter's Brush
- Chevron
- Handlebar
- Pencil
- Toothbrush
- Lampshade
- Zorro
- Villain
- Fu Manchu
- English
- Dalí

* If your respirator has an exhalation valve, some of these styles may interfere with the valve working properly if the facial hair comes in contact with it.
* This graphic may not include all types of facial hairstyles. For any style, hair should not cross under the respirator sealing surface.

Source: OSHA Respiratory Protection Standard
Further Reading: NIOSH Respirator Trusted-Source Webpage
https://www.cdc.gov/niosh/topics/respiratory/facepiecefilter.html

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health
Psychological Stress Against Women

- Stay-At-Home Orders
- Worsening Mental Health
- Intimate Partner Violence
Long-Haulers
If history repeats itself, I'm so getting a dinosaur.
Lack of Consideration of Sex and Gender in Clinical Trials for COVID-19

Trials Registered: 2,484
• Mention s/g as recorded variable: 16.7%
• Allude to s/g in analysis: 4.1%

Right Evidence at the Right Time

Susceptibility
Illness Severity
Treatments
Pharmaceuticals
Vaccine Formation
“Enraging and clearly written, this book is a must-read for all women...”

—Maia Szalavitz, New York Times bestselling author of Unbroken Brain

Website: https://www.alysonmcgregormd.com
Facebook: Alyson McGregor, MD
Twitter: mcgregormd
Instagram: mcgregormd