

2 nd International Symposium on Thalidomide Embryopathy  
 15/Jul/2019  
 Tokyo, Japan

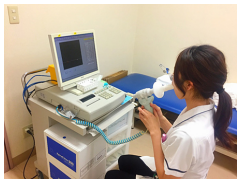
**Preserved pulmonary function in Thalidomide Embryopathy in Japan**

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1

**1. Pulmonary Function data from health check up for Thalidomide Embryopathy**

2. Importance of Smoking cessation
3. Preventing Respiratory Infections



2

**Pulmonary Function of TE at 50 yrs old**  
 n=28 (Male: n=14, Female: n=14)

- %Vital capacity (=VC/VC predicted: %VC):  $89.6 \pm 2.6\%$
- Forced Expiratory Volume in 1 sec (=FEV1/FVC: FEV<sub>1</sub>%):  $81.7 \pm 1.4\%$

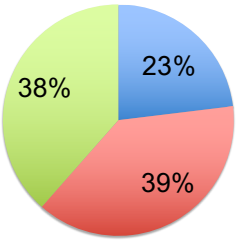
No specific pulmonary disease or dysfunction was not identified in TE at age of 50 y.o.

3

**Result from Health check up in 2017- 2018 at 55 yo**

4

**Patients with TE visited Teikyo University Hospital**  
 Patients: n=11 (Excluded asthma and cerebrovascular disease)  
 55.5 ± 0.3 years old, M: F = 8: 3



- Current Smoker (23%)
- Ex Smoker (39%)
- Never Smoker (38%)

5

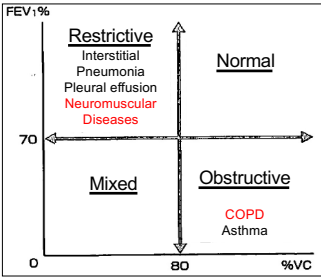
**Pattern of dysfunction and diseases**

Normal  
 %VC ≥ 80% and FEV<sub>1.0</sub>% ≥ 70%

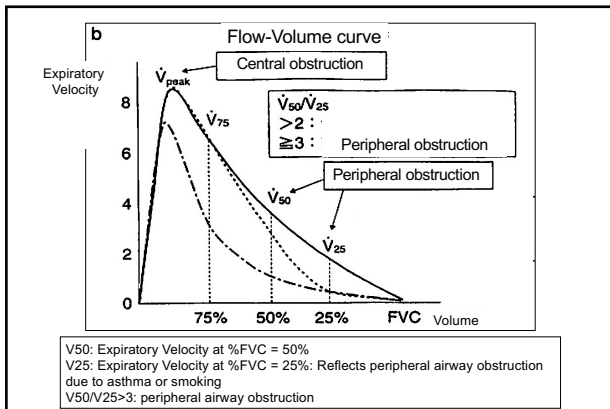
Obstructive  
 FEV<sub>1.0</sub>% < 70%

Restrictive  
 %VC < 80%

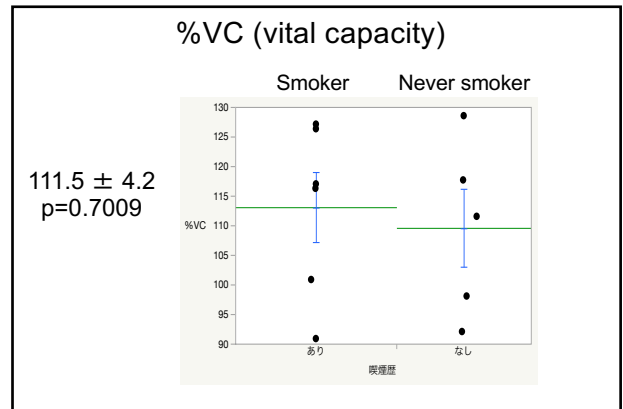
Mixed  
 %VC < 80% and FEV<sub>1.0</sub>% < 70%



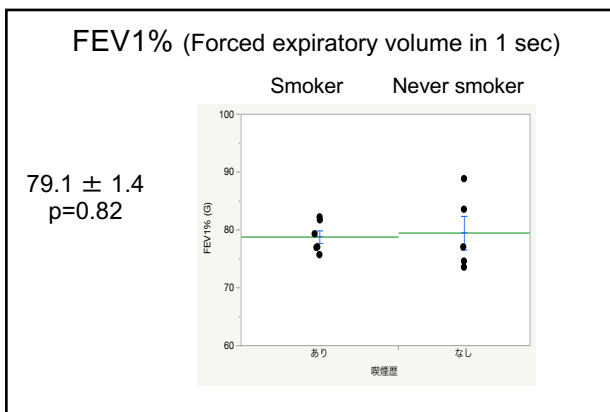
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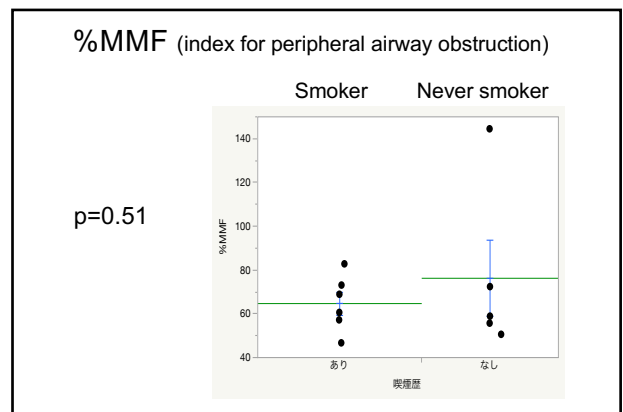
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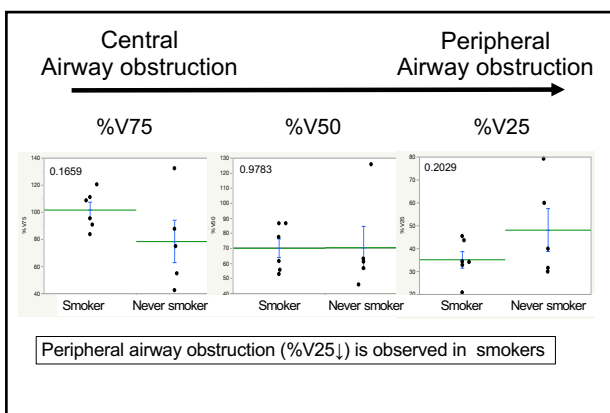
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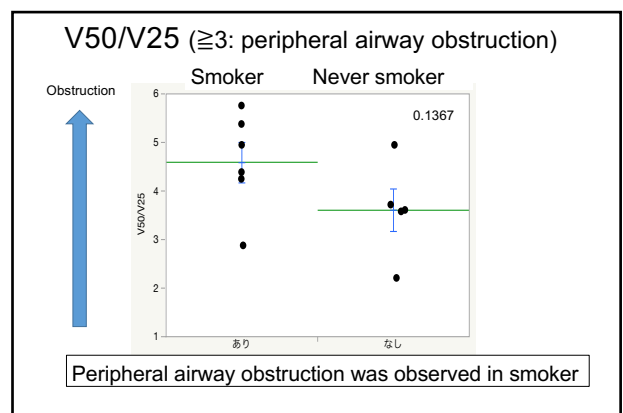
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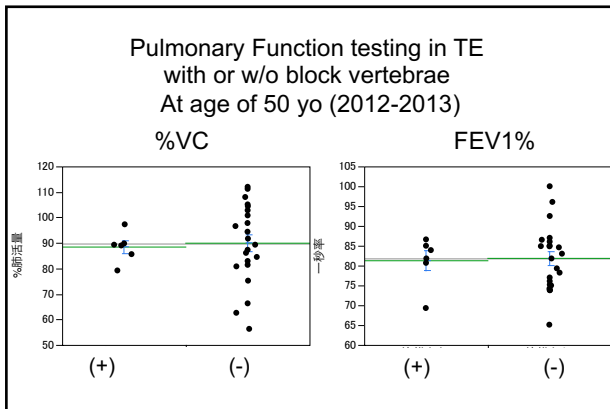
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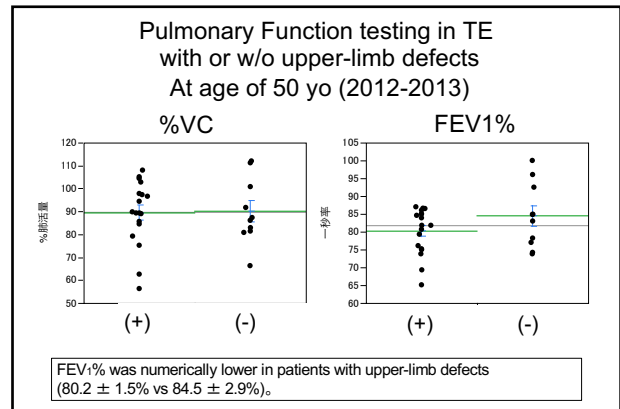
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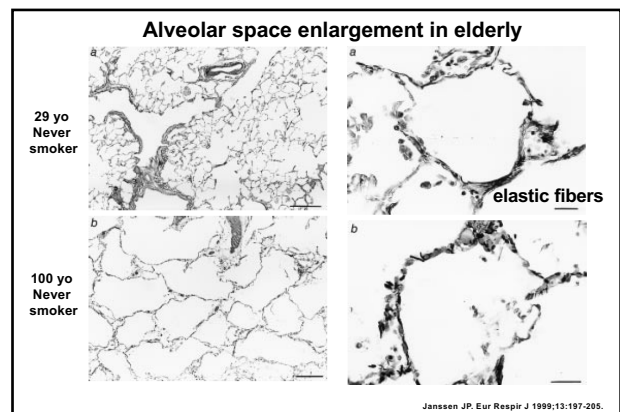
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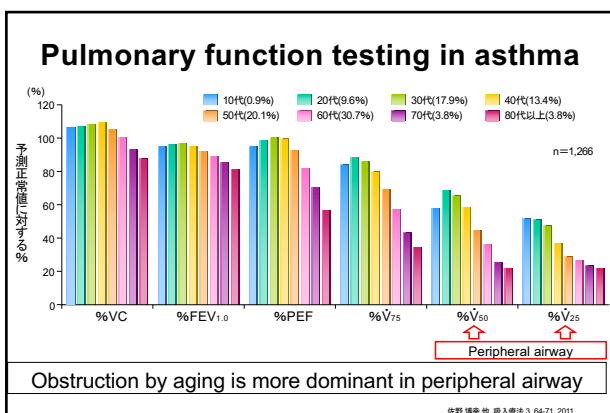
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- ### Results
- The proportion of smoker in TE was 23% (Average 17.9% in Japan).
  - The value of %VC and FEV1% was preserved and value in all patients was within normal range.
  - Peripheral airway obstruction was observed in smokers.
  - FEV1% tended to be lower in patients with upper limb defect.

15



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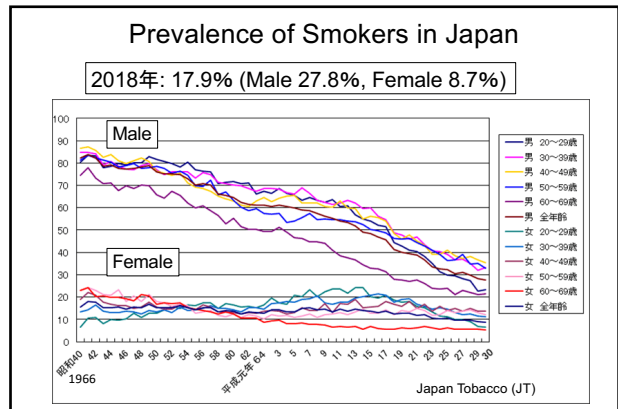
- ### Summary
- Although pulmonary function in patients with TE at age 55 yo was within normal range, peripheral airway obstruction, which can lead to COPD was observed in smokers.
  - As %FEV1 was numerically lower in patients with upper-limb defects, smoking cessation is highly recommended to such patients.

18

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19



20

### Effect of Smoking on various diseases

<p><b>Cancer</b></p> <ul style="list-style-type: none"> <li>Lung</li> <li>Leukemia (AML)</li> <li>Oropharyngeal</li> <li>Esophageal</li> <li>Pancreas</li> <li>Bladder</li> </ul> <p><b>Cardiac diseases</b></p> <ul style="list-style-type: none"> <li>Ischemic coronary disease</li> <li>Cerebrovascular diseases</li> <li>Peripheral arterial diseases</li> <li>Aortic aneurysm</li> </ul> <p><b>Pulmonary Diseases</b></p> <ul style="list-style-type: none"> <li>Chronic obstructive</li> <li>Pulmonary diseases (COPD)</li> <li>Pneumonia</li> <li>Asthma</li> </ul>		<p><b>Reproduction</b></p> <ul style="list-style-type: none"> <li>Low weight birth</li> <li>妊娠合併症 (Pregnancy complications)</li> <li>不妊 (Infertility)</li> <li>Sudden infant death syndrome (SIDS)</li> </ul> <p><b>Others</b></p> <ul style="list-style-type: none"> <li>Osteoporosis</li> <li>Cataract</li> <li>Gastric Ulcer</li> <li>Diabetes</li> <li>Metabolic syndrome</li> </ul>
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Centers for Disease Control and Prevention: Surgeon General's Report—The Health Consequences of Smoking: 2004  
Tuchman, S. et al. Diabet Med 18:111-165, 1999  
Zilka, N. et al. Atherosclerosis 181(2):381, 2005

21

### Prevailing Heated tobacco products in Japan



20 pieces ¥460 (\$ 4)

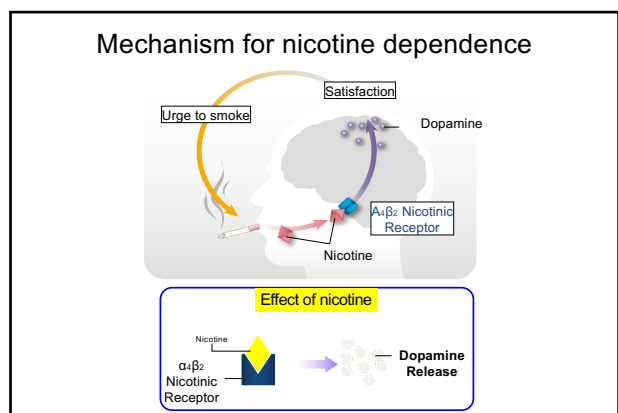
- Contains nicotine
- iQOS (Philippe Moris) Oct/2014~
- PloomTech (Japan Tobacco) Sep/2015 ~
- glo (British American Tobacco) Oct/2017 ~
- Minor under age of 20 cannot purchase.

22

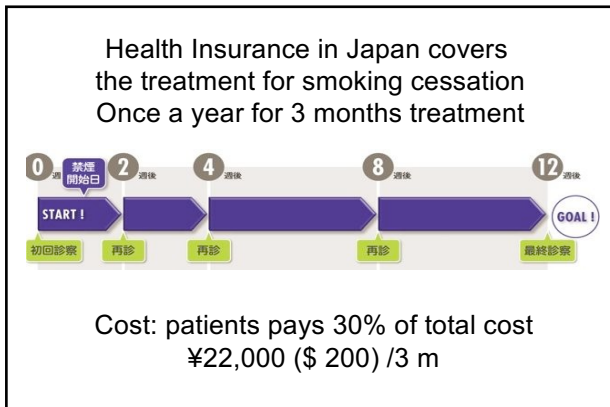
### Recent data concerning heated tobacco products

- Prevalence of iQOS is rising  
1.3% in 2015 → 4.9% in 2016  
The most prevalent age:  
Male: 20~49 yo, Female: twenties
- Ninety-eight percent of iQOS is sold in Japan.
- Used by previous smoker who wants to quit smoking: 19% > Never smoker: 1.3%  
→ suggesting the possibility of gateway for smoking.

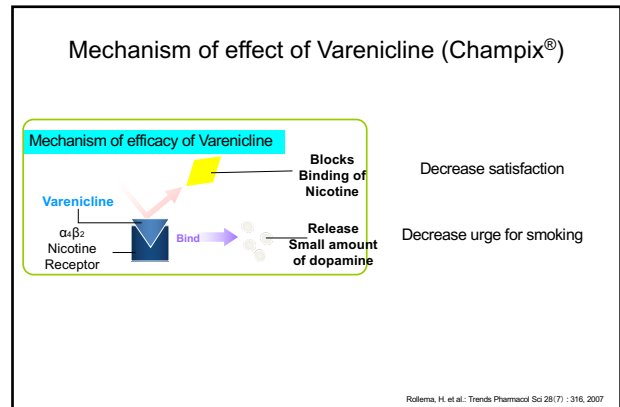
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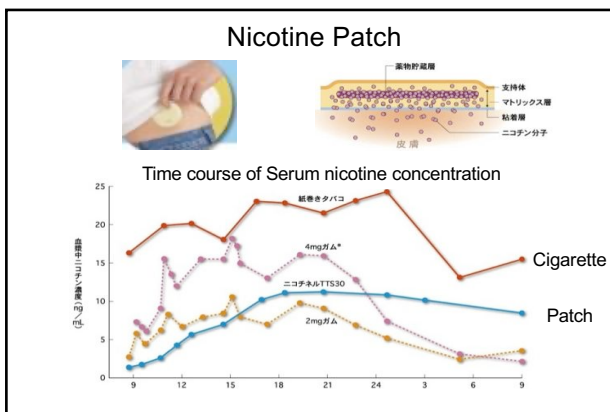
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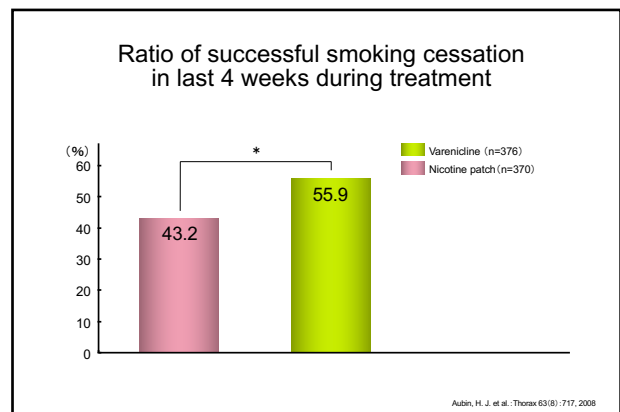
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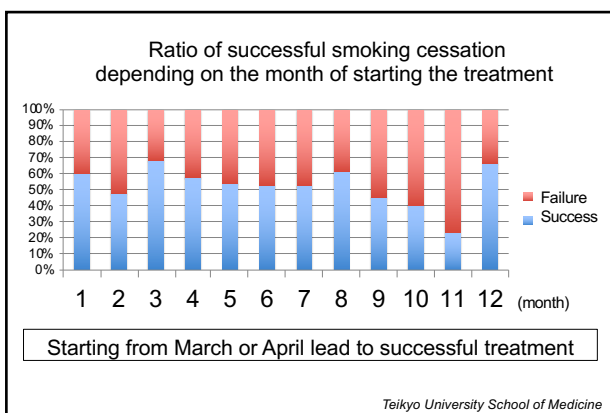
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27



28



29

Summary

- In Japan, treatment for smoking cessation is covered by nationwide health insurance.
- Two drugs are available.
- As smoking rates in patients with TE might be higher than Japanese average, to inform about harmful effects of smoking is important to keep good health status.


30

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Crowded Train in Tokyo

31



**IV Internal Medical Care**

4. Preventing Respiratory Diseases and Infections

- No respiratory diseases or dysfunctions specific to thalidomide embryopathy patients have emerged.
- Thalidomide embryopathy patients with upper-limb defects tend to have lower forced expiratory volume in 1 second and should therefore avoid smoking.
- Strapless masks and masks for people with microtia are available to prevent the droplet transmission of infections.
- Alcohol disinfection is highly effective against the influenza virus. Alcohol disinfectants are sold as sprays and gels. Automatic hand sanitizers can be purchased for several thousand yen.
- Hand washing, disinfecting with sodium hypochlorite, and thorough heating of clams are effective ways for preventing norovirus infections.
- Nicotine patches and oral varenicline therapy are effective pharmacotherapies for achieving smoking cessation.
- The out-of-pocket cost of insurance-covered smoking cessation therapy is about 250 yen per day, which is cheaper than a pack of cigarettes.
- Patients looking to quit smoking are more likely to achieve success if they begin treatment with determination.

32

**Preventing Respiratory Infections**  
 Focusing on prevention strategies aimed at the influenza virus

- Influenza virus infections generally peak around February of each year. Infections are generally transmitted via two routes.
- Droplet transmission** occurs when someone inhales virus particles contained in droplets coming from the cough of an infected person.
- Contact transmission** occurs when someone touches a doorknob or other surface touched by an infected person and then touches their nose or mouth.

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33

**Strategies for preventing infection**  
 Preventing droplet transmission

- Wear a mask and avoid going to crowded locations. Masks for people with microtia are commercially available. Examples are masks with long straps and strapless masks that are adhered to the cheeks with silicone tape.
- These masks also help prevent pollen allergies.



Mask with long straps




Strapless mask

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34

**Preventing contact transmission**

- Wash and disinfect hands after going out. Remember to wash your hands after returning home.
- Alcohol disinfection is highly effective against the influenza virus. Disinfecting the hands with an alcohol product is useful for people unable to rub their hands together.
- Alcohol sprays, such as Welpas, and gels, such as Softy Hand Clean, are available. Gel products can be dispensed and applied with one hand. Automatic hand sanitizers can be purchased for several thousand yen. They can be operated with one hand and can also be used for feet.



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35

- Maintaining optimal humidity levels: Breathing dry air reduces the defensive properties of the airway mucosa, which increases the chance of getting sick. A humidifier should be used to maintain proper humidity levels (50–60%).
- Getting enough rest and eating nutritious, well-balanced meals.
- Getting a flu vaccination: Influenza vaccination reduces the chance of getting the flu and prevents influenza infections from worsening. Flu shots require about 2 weeks to become effective and should therefore be given by mid-December. Only one shot is needed. A shot is needed every year because the effects wear off after about 5 months and prevalence strains change from year to year. Flu shots contain an inactivated vaccine free of pathogens and therefore cannot cause influenza. Adverse reactions, which include redness and swelling at the injection site, fever, headache, and fatigue, normally resolve within 2–3 days.

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36

### Conclusion

- Although pulmonary function in patients with TE at age 55 yo was within normal range, peripheral airway obstruction, which can lead to COPD was observed in smokers.
- As %FEV1 was numerically lower in patients with upper-limb defects, smoking cessation is highly recommended to such patients.
- In Japan, treatment for smoking cessation is covered by nationwide health insurance. Two drugs are available.
- As smoking rates in patients with TE might be higher than Japanese average, to inform about harmful effects of smoking is important to keep good health status.
- As the physical activity of patients with TE potentially becomes lower due to muscle skeletal pain, development of COPD, which can lead to low physical activity, should be avoided.
- To avoid respiratory infections, masks with long straps and strapless masks are available.