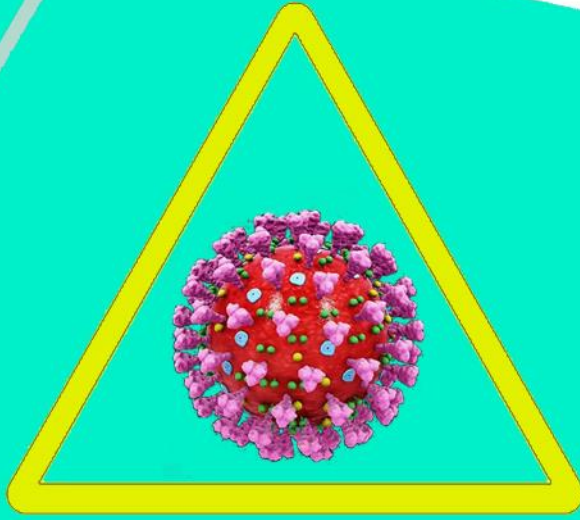




MISTIC

MIZORAM



COVID-19

COVID-19 CHUNGCHANGA ZAWHNA LEH CHHANNA THENKHAT

**Mizoram Science, Technology & Innovation Council
Directorate of Science & Technology
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THUHMA

Kan hriat theuh angin khawvel pumah hripui hlauhawm tak COVID-19 a leng mek a. He hripui hian India ram pawh lo thlengin Mizoram ngei pawh a lo thleng ve ta a, eng emaw zawng talin min nghawng theuh mai a. India ram pumah inkharkhip kalpui a ni a, nunphung pawh a tikhaihlak nasa hle a ni. Hetia theih tawpa tan kan la chung hian he hripui hian kiam lam a pan lo tih a hriat a; mipui nawlpuiin chiang lehzuala he hripui hlauhawm tak lo thlentu leh he hripui chungchang hrim hrim hi kan lo hmelhriat ve hi a tul tak meuh meuh a ni. Thuthang tam tak hriat tur a awm a, hriatna zau zawk nei lo tan pheichuan a dik leh dik lo pawh thlir thiam a har fo mai. Hemi kawnga kan hriat tur pawimawh te hi Mizo tanng ngeia chhiar tur siam hi a tul hle a kan hriat avangin he booklet hi siam a lo ni ta a ni.

COVID-19 do kawngah hian Science & Technology lam pawhin kan theih ang tawkin hma kan la ve a. Mizoram Science Centre-a Innovation Hub atanngin a tul anga hman turin Protective Visor pawh 3D printer hmangin eng emaw zat siam chhuah ve a ni a, Health Minister Dr. R. Lalthangliana leh Home Minister Pu Lalchamliaana te hnenah May 5, 2020 khan hlan a lo ni tawh a. Hei bakah hian Mizoram Science, Technology & Innovation Council chuan Alcohol Based Hand Sanitizer samin tan kan la mek bawk.

He hripui do kawngah hian mimal tinin tha thlah lo ila, sawrkarin fimkhurna tur hrang hrang a duante uluk zawkin zawm theuh ila a duhawm hle a ni. COVID-19/Coronavirus kaihnawih thil tam tak erawh he booklet-ah hian telh a ni lova, hriat belh duh kan neih chuan a hnuiaia whatsapp/email kan dahah hian zawh theih a ni.

Date: 08.05.2020

(DR. R.K. LALLIANTHANGA)

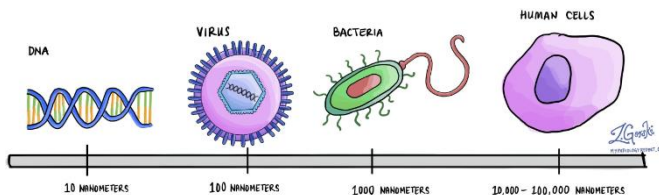
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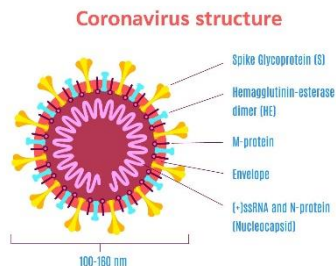
1. Virus te hi eng nge an nih?

- Virus-te chu hrik chi khat, mahnia nunna nei lo, thilnung behchhan tur an neih chauha thilnung anga khawsa thin an ni.
- Virus te hian tuamtu kawr, protein emaw, protein leh thau emawa siam an nei a, chumi chhungah chuan genetic material RNA (ribonucleic acid) emaw, DNA (deoxyribonucleic acid) emaw an nei.
- Virus RNA emaw, DNA emaw chu an thilnung behchhan timurah intatlutin, an inthlahpung thin.
- Virus te hi an te em em a, mit lawnga hmuh theih a ni lo. Microscope tha mi, Electron Microscope hmangin hmuh theih an ni.
- Tuna virus hmuhchhuah thar ber SARS-CoV-2 hi 60 nm aṭanga 120 nm (nanometer) vela lian an ni a. Mihring samzai chhah zawng hi hmun 1000 ah then ila, chuta thenkhat ang vel chu a ni.



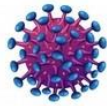
2. Coronavirus leh COVID-19 te hi eng nge an nih?

- Coronavirus te hi virus chhungkhat (family), mihring leh rana natna thlen theitu an ni.
- Coronavirus te hi RNA-virus an ni.
- Coronavirus te hi microscope hnuai a lan danin an pianhmang hian lallukhum a ang hle a, chuvang chuan a hmingah pawh ‘corona’ tih vuah a ni.
- Coronavirus chi hrang hrangte hi mihring thawkna kawng (respiratory system) a harsatna leh natna thlen thei an ni a, hritlang satliah atanga natna hlauhawm ber ber Middle East Respiratory Syndrome (MERS) leh Severe Acute Respiratory Syndrome (SARS) te leh, tun hnaia hmuhchhuah thar ber COVID-19 thlentu an ni.
- COVID-19 hi coronavirus chi khat, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) ina natna a thlen hming a ni a. Coronavirus Disease-19 tia vuahin, a natna hming bakah an hmuh chhuah kum, 2019 an belh tel.
- COVID-19 natna hi coronavirus hmuhchhuah thar berin a thlen a ni a. December 2019 a Wuhan China-a natna a rawn lan chhuah hma khan hriat a la ni ngai lo. Tunah hian khawvel hmun hrang hrangah darhin ram tak takah buaina nasa tak a thlen mek a ni.



3. Virus-in mihringa natna a thlen ÷hin hrang hrangte eng nge?

- Mihringa natna thlen theitu virus hi chi 200 chuang hmuh chhuah tawh a ni.
- Tun hnaia rawn lar zualte zingah Ebola, SARS, MERS, Zika, influenza virus eng emaw zat leh, SARS-CoV-2 te an tel.
- Natna khirh em em thlentu HIV leh Hepatitis hrikte hi virus vek an ni.
- Virus ÷henkhat cancer natna thlen thei a awm bawk.



HIV



Hepatitis B



Ebola Virus



Adenovirus



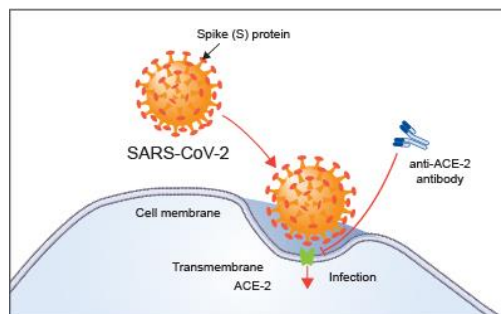
Influenza



Bacteriophage

4. SARS-CoV-2 hi mihring taksaah engtia luta awmhmun khuar nge an nih?

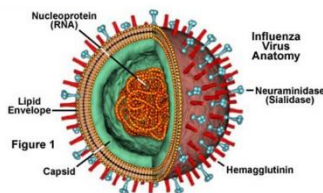
- SARS-CoV-2 virus hi ka, hnar leh mit aṅangtein mihring taksaah lutin, thawkna dawt zawh thlain, virus tuamtu protein hling chu cells (timur) a ACE-2 receptor (angiotensin-converting enzyme 2) an tihah chuan a inham tang ta ṭhin a ni.
- He ACE-2 receptor hi mihring taksa peng hrang hrang chuap, kal, lung, ril, la, thluak, ril tawp, phing, thin, thisen zamah te a awm a. Virus beh theihna hi hmun tam takah a awm niin mithiamte chuan an sawi a ni.
- ACE-2 receptor aṅang hian heng cells-ah te hian hrik hi a lut a, mihring cells a hmanraw hrang hrang hman hian virus hi a inthlahpung a, a tawpah cells chu an tichhiain an that nghal ṭhin bawk a ni.
- Heng mihring cells pawimawh tak takte hi virus hian a tihchhiat zel avangin an hnathawh tur an thawk thei lova, taksain chhiat lam a pan phah zel a ni.



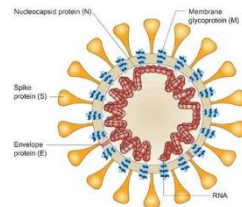
5. Seasonal flu (sik leh sa inthlak avanga hritlang khawsik) leh COVID-19 inanna leh danglamnate eng nge?

Inannate:

- Heng virus chi hnihte hian thawkna kawng lamah harsatna (respiratory disease) an thlen ve ve.
- Na vak lo aṅanga na tak, thihna hial pawh thlen thei ve ve.
- Inkhawih (contact), tui/chil per (droplets) leh hrik kaina *thil pang* (contaminated surface) aṅanga inkaichhawn theih ve ve. (*Thil pang* tih hian dawhkan chung leh sir vel, ṭhutthleng, kawngkhar vawna, lehkhahu leh a dang dang a huam vek).



Influenza Virus



Coronavirus

Danglamnate:

- Seasonal flu, sik leh sa inthlak avanga hritlang khawsik, flu tia kan hriat thlentu hi influenza virus a ni a, COVID-19 erawh chu coronavirus vanga awm a ni.
- Influenza virus incubation (hrik kai aṅanga natna lanchhuah hun) hun chung hi COVID-19 virus aiin a rei lo zawk.

- Influenza virus hi naupang, nau pai, upa lam leh natna nei sa tan a hlauhawm bik a, COVID-19 erawh chu upa lam leh natna neisate tan a hlauhawm zual bik.
- Seasonal flu aiin COVID-19 hian thihna a thlen hnem zawk.
- Influenza virus laka invenna vaccine a awm tawh a, COVID-19 laka invenna vaccine siam chhuah a la ni lo thung.

6. Coronavirus hi engtin nge a inkaichhawn theih dan?

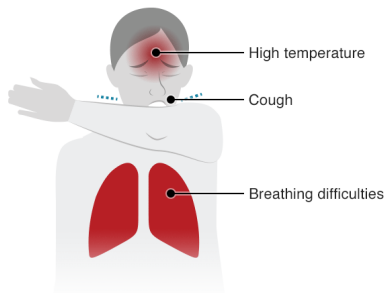
- Coronavirus hrik kai, COVID-19 veite aṭangin he natna hi inkaichhawn theih a ni.
- Khuh, hahchhiau leh tawng aṭanga tui/chil per (droplets) aṭangin a inkaichhawn theih.
- Heng droplets-te hi a rih avangin boruakah rei tak a leng thei lo.
- Heng droplets-te hi leia a tlak hmaa kan hip luh chuan natna hi kan kai thei.
- Lei mai bakah *thil pang* hrang hrang, kawngkhar vawna, dawhkan leh a dangteah droplets-te hi a kai thei.
- Droplets kaina thil kan khawih fuh chuan virus hi kan kai palh thei.



7. Coronavirus kaite taksaah engtin nge a lan chhuah (symptoms) thin?

- A tlangpuiin COVID-19 veite chuan khawsik, taksa chau ngawih ngawih leh khuh ro (dry cough) an nei thin.
- Thin khatah chuan taksa na, hnar ping, lu na, mit na (conjunctivitis), hrawk na, khawthalo, rim leh thil tui hriatna hloh, vun ro leh thak bakah kut leh ke zungtang rawng danglam tein a lang chhuak bawk.
- COVID-19 kai zinga mi paruka pakhat zelin an la na bik a, thawk lamah harsatna an nei bawk.
- Upa lam leh natna dang nei, lung tha lo, BP sang leh zunthlum nei ten an la na duh hle.
- COVID-19 kaia kan inhriat chuan mahni inkhung hran a (self-isolate), a rang thei ang berin COVID-19 Mizoram Helpline phone number 102 (Toll Free), 0389-2318336/0389-2323336 - ah in report vat tur a ni.
- Inrinhlelh leh hlauhthawn avangin damdawiinah inentir tura kal miah loh tur.

Coronavirus: Key symptoms



Source: NHS

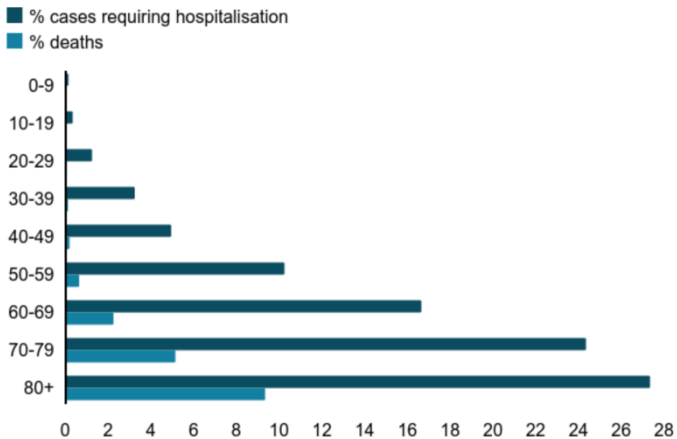
BBC

8. COVID-19 natna hi lang chhuak nghal mai lovin engtia rei nge a awm theih? Eng nge a hlauhawmna?

- COVID-19 hrik hi mihring taksa chhungah rei tak natna lang chhuak mai si lovin a inphum thei a. Hrik kai atanga natna lan chhuah hi a tlangpuiin ni nga atanga ni ruk vel a ni a, mahse ni khat atanga ni 14 thleng pawh a ni thei. Tin, mi thenkhatah ni 20 hnua langchhuak ta chauh te pawh an awm bawk.
- Natna a lan chhuah mai loh chuan hrik kai tih inhre lovin rei tak a awm theih a. Hemi chhung hian nasa takin hrik hi midangah kan kai darh thei thung.

How different age groups might be affected

Figures based on cases in China and Italy













Source: Imperial College Covid-19 response team



9. COVID-19 surface stability (thil pangah him taka a awm rei theih chin) chungchang min hrilh thei em le?

- COVID-19 virus hi engtia rei nge him tak leh chhe lova a awm theih hi chiang taka sawi a har em em a. Mithiamten an zir chiannaah chuan darkar eng emaw zat atanga ni eng emaw zat thleng chhe lova awm theia ngaih a ni.
- Zirmi thenkhat sawi dan chuan plastic leh stainless steel pangah darkar 72 chhe lovin a awm thei a, Dar (copper) pangah darkar 4 aia tlem, cardboard (lekhka khawng, lekhka chhah, bawma hman chi) pangah darkar 24 aia tlem niin an sawi.
- Heng pawh hi temperature-te leh humidity-te (boruak hnawn dan) azirin a danglam thei tho.

HOW LONG IS CORONA VIRUS DETECTABLE ON SURFACES?		
	AIR	3 HOURS 
	COPPER	4 HOURS 
	CARDBOARD	24 HOURS 
	STAINLESS STEEL	2-3 DAYS 
	PLASTIC	3 DAYS 

10. COVID-19 test dan chi hrang hrang engte nge?

COVID-19 test hi tunah hrih chuan chi hnih hman lar deuh deuh a awm:

- Polymerase Chain Reaction (PCR) - hei hian virus genetic material (RNA) a hmu thei a. Sample hi hnar emaw hrawk emaw aṅanga lak ṅhin a ni. He test hian natna hrik pai mekte (active case) a finfiah a. COVID-19 natna nei hmuhchhuahna atana hman a ni.
- Serology test - Natna hrik kai tawh finfiah nan hei hi hman a ni tlangpui. Hrik kan kai hian kan taksaah natna dotu khawl 'immune system' a chawk tho va, hrik dotu/sualtu 'antibody' chu thisen varin a siam ṅhin a ni. Hemi test hi natna hrik miin a lo hmachhawn tawh em tih finfiahna atana hman ṅhin a ni. Tuna kan hriat lar RAT (Rapid Antibody Test) inngahna pawh hi a ni.



11. COVID-19 vanga thi aṭangin a inkaichhawn theih em?

- WHO (World Health Organization) chuan hemi thu ziah ni thleng hian COVID-19 vanga thite aṭanga hrik inkaichhawng an la awm loh thu a sawi. Amaherawchu, COVID-19 vanga thite ruang sawngbawl danah fimkhur a ngaih thu a sawi. Sawrkarin inkaihhraina a siam ang hman a him ber.



12. COVID-19 lakah engtin nge kan inven ang?

- Inkharkhip - Mahni ina tawm tlat a, a ṭul zual hunah chauh pawn chhuah tur a ni. Chhuah pawhin hmaikawr (mask) kan hman ang a, thil ṭul lo chu khawih loh tur. Ina kan haw veleh fai takin sahbawn nen kut kan sil tur a ni.
- Social distancing - Ṭul zuala kan chhuahin midang hnaih taka awm loh tur. A lo berah feet 6-a inhlata awm hram hram tur.
- Mask vuah - Kan chhuah vahnaah mask vuah ngei ngei tur a ni.
- Kut sil ngun - Uluk tak leh ngun takin kut sil tur a ni a, second 20 tal sil ṭhin tur a ni. Tui leh sahbawna kut sil emaw hand sanitizer kan hman hian virus hrik a that thei a ni.
- Mit, ka leh hnar khawih loh tur - Kan kut hian thil tam tak kan khawih a, virus hrik a kai palh thei. Hrik kai chungah mit emaw, ka emaw, hnar emaw kan khawih chuan kan taksa chhungah hrik a lut palh thei.



- Respiratory hygiene practice a tul - Fai leh fimkhur taka kan chet hram hram a ngai. Kan khuh emaw, hahchhiau emawin kan ka leh hnar te, rawmawl emaw, tissue emawin kan hup ang. Kan inhupna tissue chu bawlhhlawh bawm chhin neiah paih nghal tur a ni. Rawmawl chu a hranga dah a suk nghal tur, chuan fai takin kut sil tur a ni. Ink huhna tur kan neih remchan loh chuan kiu (elbow) in ka leh hnar hup tur a ni.
- Intih hrisel hram hram a tul – taksa insawizawi, rilru hriselna ngaih pawimawh, taksa raldo khawl tihchak hram hram tur a ni.

13. Mask vuah hi eng nge a t̄angkaina?

- Mask vuah hian hmui, hnar leh khabe a tuam kim tur a ni a. Hei hian hrileng darh chak lutuk tur a veng thei. Veivahna hmun t̄henkhat leh dawr chhungah te duh angin *social distancing* kalpui a har, chuvang chuan chhuahvahna reng rengah mask vuah ngei ngei tur a ni.
- COVID-19 vei ten mask an vuah ngei ngei tur a ni a. Hei hian midang an kai chhawng tur nasa takin a veng.
- Mask kan vuah hian COVID-19 hrik pai, inhre si lo ten midang an kai chhawng tur lakah eng emaw chen a veng.
- Droplets kan hip lut tur eng emaw chen min veng ve thei.
- Mask kan vuah vangin kut sil leh social distancing kan thlahthlam tur a ni chuang lo.



14. Mask hrang hrangte eng nge?

Tun COVID-19 boruaka kan hriat lar mask chi hrang hrang hi hlawm lian pathumah a then theih a:

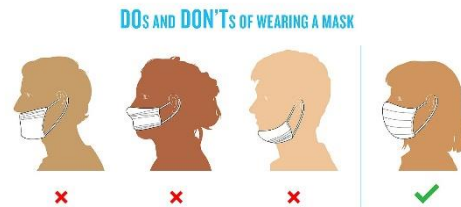
- **Puan mask** – Ina thuichawp theih mai a ni a. Puan mask hian virus hrik kai tur direct takin a venghim hran lo. Amaherawhchu khuh emaw hahchhiauw emaw a droplets per chhuak tur a lo veng thei (contain). Hrik kai inhre si lo ten midangte an kaichhawwna tur a veng thei.
- **Surgical mask** – Damdawi lam thiamte hman thin a ni. Hnar, ka leh khabe te thawl deuh hlekin a tuam. A vuahtu chu tui per leh puh te lakah a venghim thei. A vuahtuin natna hrik a tidarh tur a veng tel bawk.
- **N95 mask** - hi N95 respirator an ti thin bawk. Tawt tha takin hmu, hnar leh khabe a tuam. Virus te tak te leh bacteria te a thlifim thei. N95 tih hming a put chhan hi hrik leh thil te tak te te 95% thlenga a thlitfim theih vang a ni. N95 hi size hrang hranga siam niin, a vuahtu tan uluk taka fit tur a ni a. Phui takin hmai a tuam ang, thildang engmah lut thei lo tura phui tha a ni tur a ni. Damdawi lama thawktute hman atana khek tur a ni.

N95/ N99/ KF94 / Medical Mask



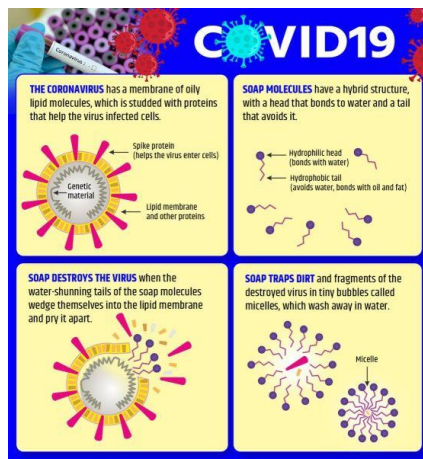
15. Mask hman dan dik eng nge?

- Mask vuah hma in tui leh sahbawnin fai takin kut sil tur a ni.
- Hmui, hnar leh khabe phui takin kan tuam tur a ni, kar awl awm lovin.
- Kutin mask khawih loh tur, kan khawih palh a nih chuan fai takin kut sil nghal tur.
- Mask chu a huh emaw, a hnawn emaw chuan a thar a thlak tur a ni.
- Disposable (vawi khat hman) mask ang chi a nih chuan hman nawn loh tur.
- Mask phelh dawnin a hnung lam (beng a elastic invuah) aţangin phelh ţan tur. Mask hma lam khawih loh tur. Vawi khat hman chi mask a nih chuan bawlhhlawh bawm chhin neiah paih tur. Ţhui chawp puan mask a nih chuan fai taka suk nghal tur a ni. Mask phelh zawh veleh fai takin kut sil nghal tur a ni.



16. Kut sil leh hand sanitizer hmanin engtin nge virus a tihchhiat/thah ang?

- Tuiin bal satliah a tleng fai thei. Mahse coronavirus hrik te lutuk, vun kar te tea biru that tur chuan sahbawn nen uluk taka nuai a ngai.
- Coronavirus kawr hi lipid (thau) leh protein a siam a ni. Hemi thau hi sahbawn leh sanitizer-a alcohol te hian a tichhe thei a ni. Chaw eina thleng mawm pawh sahbawn tel lo chuan a fai thei lo ang tho hi a ni.
- Coronavirus kawr a chhiat tawh chuan a chhunga genetic material chuan venghima tuamtu a nei ta lova, a darh (disintegrate) ve nghal a, mihring timurah a lut thei ta bik lo a ni.



17. Naupai tan eng nge a hlauhawm dan?

- Nu naupai tan COVID-19 hi a hlauhawm bik em tih finfiahna chiang takin a awm hrih lo. Zirchian mek a ni. Mahse nuin nau a pai lai hian a taksaah nasa takin danglamna a awm thin a, thawkna kawng lama infection kai an awlsam bik hle a, chuvang chuan fimkhur zual a tha.

 **I'm pregnant.**
How can I protect myself against COVID-19?

 Wash your hands frequently

 Avoid touching your eyes, nose and mouth

 Put space between yourself and others

 Cough or sneeze into your bent elbow or a tissue

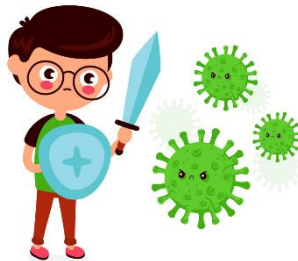
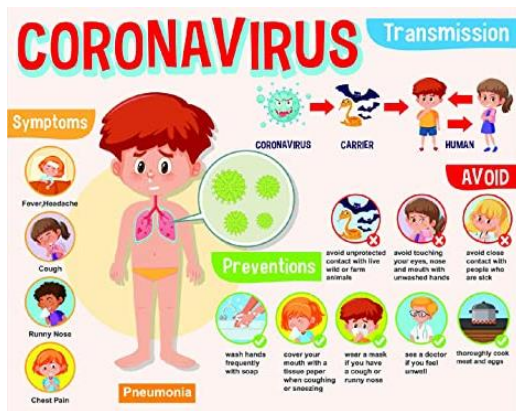
If you have fever, cough or difficulty breathing, seek care early. Call beforehand, and follow medical advice.

 World Health Organization

#COVID19 #CORONAVIRUS

18. Naupang tan eng nge a hlauhawm dan?

- COVID-19 hi nausen, naupang leh puitling ten an vei thei vek a. Hriat chinah chuan naupang hian an la na lo deuh niin a lang. Taksain natna a do theihna ‘immune response’ hi thuah hnih thum velin a inchhawng a. Naupangah hian a thuah pawnlang ber, hrik lo dawngsawng hmasa bertu ‘innate immunity’ an neih that vang pawh a ni thei tiin mithiamte chuan an sawi. Amaherawhchu, zirchian tur tam tak a la awm a, tute tan pawh fimkhur em em a ngai a ni.



19. COVID-19 damdawi emaw, therapy emaw, invenna vaccine a awm em?

- COVID-19 damdawi hi siamchhuah a la ni lova, khawvel pumah scientist ten damdawi leh vaccine siam kawngah nasa takin hma an la mek a ni.
- Khawthlang damdawi (western medicine), ramhmul/tualchhung (traditional practice) damdawi te leh mahni ina inenkawlna (home remedies) ten COVID-19 symptom thenkhat chu a chhawk thei.
- Mahnia damdawi inchawh (self-medication) te leh antibiotic lo ei ve ngawt te hi tih hauh loh tur a ni.



20. COVID-19 vei tawh ten an vei nawn leh thei em?

- Miin COVID-19 a vei tawh chuan taksa raldo khawl (immune system) in natna hrik chu lo hmelhriat tawhin, natna vei tawh lohna tur '*immunity*' a nei tura beisei a nih laiin, hemi chungchang finfiahna chiang tak hi a la awm meuh lo.
- Zirchiangtu thenkhat chuan COVID-19 hrik sualtu '*antibody*' chu a insiam ngei a, amaherawhchu engtia rei nge he antibody hi thisenah a cham theih tih hriat a ni la ni lo. Chuvangin theihtawpa fimkhur a ÷ul a ni.

**STOP
COVID-19**

Protect yourself
and others from
getting sick

