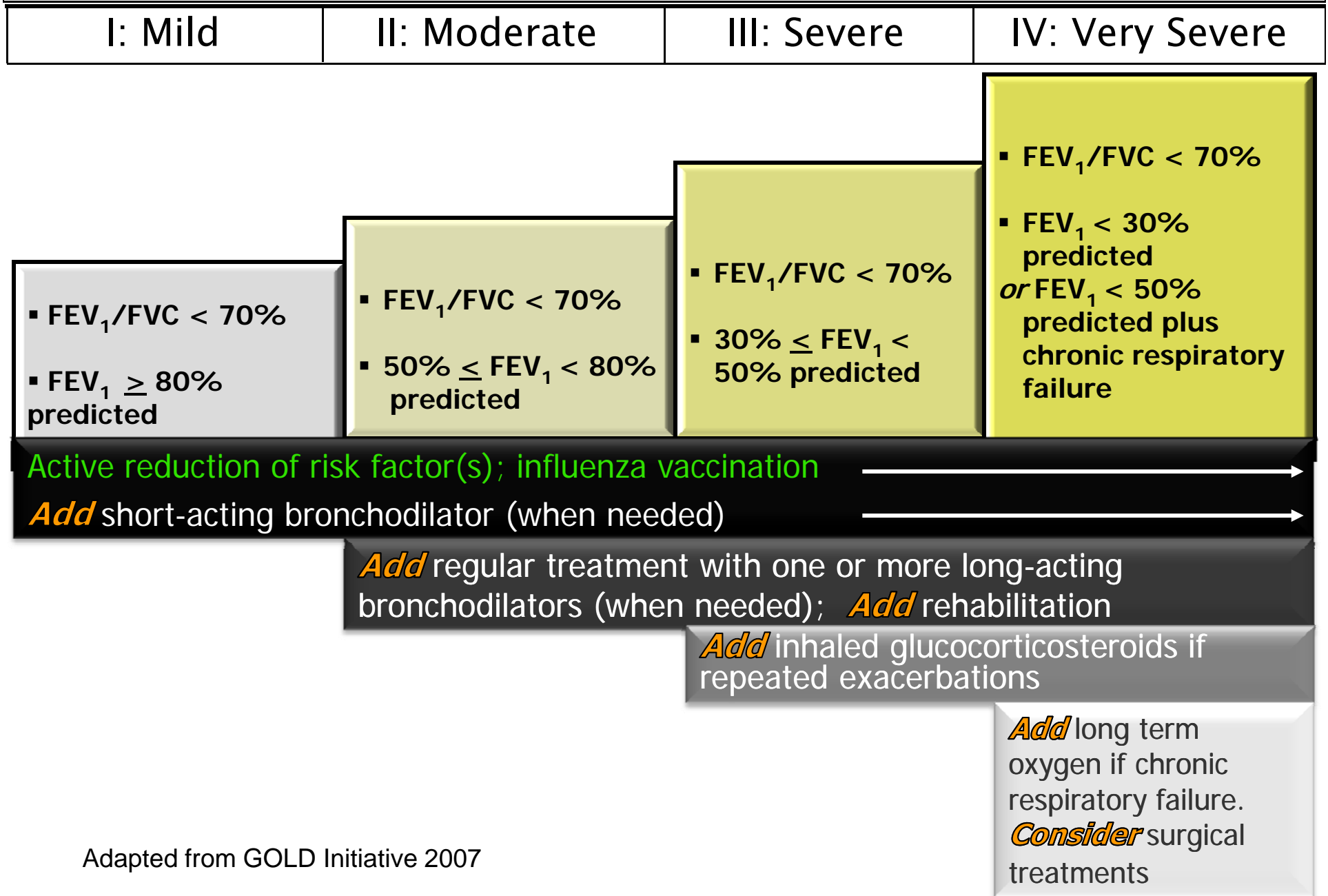
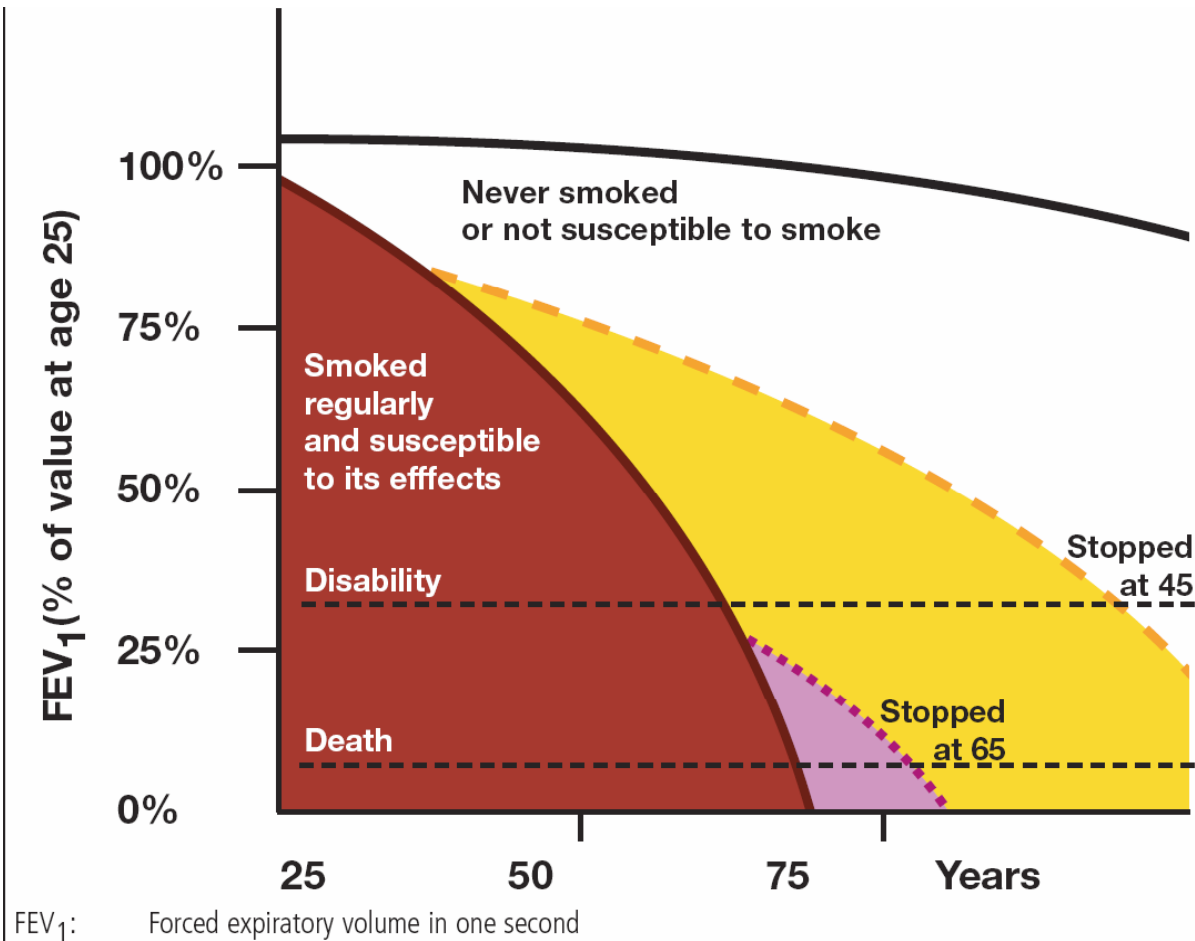


Therapy at Each Stage of COPD



Fletcher-Peto Graph: Why It's Worth Quitting Smoking



1. The diagram shows the benefit to your lungs if you stop smoking.
2. Lung function gets worse as you get older, but normally only very slowly and very slightly (Nonsmoker line)
3. In smokers, lung function can get worse much more quickly. For example, the diagram shows a smoker who becomes disabled with emphysema 65 (Smoker line)
4. If you stop smoking you delay the damage to your health and if you stop soon enough, there will be no damage (Stopped at 45 line)

HOW TO EXPLAIN TO SMOKERS THAT IT IS WORTH STOPPING

Many smokers put off stopping smoking because they believe the damage is already done, or it is too late to prevent it. For most this is not true.

The damage done by smoking accumulates over years. The risk of damage is greater for those who have smoked more, and smoked for longer. Conversely, the sooner smokers stop the greater the benefit.

This is illustrated by the diagram (overleaf).

It is based on research on chronic obstructive lung disease (bronchitis and emphysema), and on one particular measure - FEV1 - forced expiratory volume in one second, which is measured with a Spirometer.

The diagram cannot necessarily be generalised to all smokers or all diseases caused by smoking, but it clearly illustrates the principle –

The sooner you stop, the sooner you avoid excess risk.

The diagram shows that smokers with chronic airflow obstruction can avoid becoming disabled (first breathlessness, eventually emphysema) if they stop in middle age.

The middle line, **Stopped at 45**, shows that the effect is to delay the onset of disability beyond a normal lifespan. The effect of delaying cessation will be to bring the **Stopped at 45** line closed to the **Smoker** line.

How you use the diagram will depend on individual smokers and their relationship with you, but they may find the following key points helpful.

- 1** The diagram shows the benefit to your lungs if you stop smoking.
- 2** Lung function gets worse as you get older, but normally only very slowly and very slightly (**Non-smoker** line)
- 3** In smokers, lung function can get worse much more quickly. For example, the diagram shows a smoker who becomes disabled with emphysema at 65 (**Smoker** line)
- 4** If you stop smoking you delay the damage to your health and if you stop soon enough, there will be no damage (**Stopped at 45** line)

The diagram is based on Fletcher and Peto's 1977 paper, The natural history of chronic airflow obstruction. The text of this resource has been approved by Richard Peto, Professor of Medical Statistics and Epidemiology, University of Oxford.

These are the relevant key conclusions of the study:

'Firstly, we found that FEV₁ declines continuously and smoothly over an individual's life... The rate of loss seems to accelerate slightly with ageing.'

'Secondly, non-smokers lose FEV₁ slowly and almost never developed clinically significant airflow obstruction.'

'Thirdly, many smokers lose FEV₁ almost as slowly as non-smokers and never develop clinically significant airflow obstruction. They appear to be largely resistant to the effects of smoke on their airflow. Smokers who are more susceptible to these effects develop various degrees of airflow obstruction, which in some ultimately becomes disabling or fatal.'

'Fourthly, stopping smoking will, of course, make little difference to FEV₁ of a non-susceptible smoker whose lungs are not being affected by his smoking. But it may make all the difference to a susceptible smoker. A susceptible smoker who stops smoking will not recover lost FEV₁, but the subsequent rate of loss of FEV₁ will revert to normal. This finding is strongly supported by the low death rate from bronchitis and emphysema among smokers, who have given up more than 10 years earlier.'

'The important finding is that if those who would eventually die from airflow obstruction stop smoking in early middle age then their subsequent rates of loss of FEV₁ will on average be normal, so that most such individuals will keep well.'

Full reference: Fletcher C Peto R (1977). The natural history of chronic airflow obstruction. British Medical Journal. 1 1645-1648

Conceived and written by: Martin raw.

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Citation of this resource: Raw M (1994). How to explain to smokers that it is



For more information about the
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 please visit our website:
www.TexasAsthma.org

Our Vision
 Texans with asthma will realize
 optimal health & quality of life.

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ASTHMA COALITION OF TEXAS

Stepwise Approach to Managing Asthma

Clinical Features Before Treatment to Classify Severity			Preferred Long-Term Control-Daily Medications	
	Days With Symptoms Nights With	PEF or FEV1	Children ≤ 5 yr	Adults and Children > 5 yr
Step 4 Severe Persistent	Continual Frequent	≤ 60 %	High dose ICS* + Long-acting inhaled beta₂ -agonist If needed, add oral steroids	High dose ICS + long-acting inhaled beta₂ -agonist If needed, add oral steroids
Step 3 Moderate Persistent	Daily > 1 night/wk	>60<80%	Low-dose ICS + long-acting inhaled beta₂- agonist OR Medium-dose ICS Alternative: low-dose ICS + LRA* or theophylline If needed: Medium dose ICS + long-acting beta₂ agonist Alternative: medium dose ICS + LRA or theophylline	Low-medium dose ICS + long-acting inhaled beta₂-agonist Alternative: Medium dose ICS or Low-medium dose ICS + leukotriene modifier or theophylline If needed: Medium dose ICS + long-acting beta₂ agonist Alternative: medium dose ICS + leukotriene modifier or theophylline
Step 2 Mild Persistent	3-6 days /week >2 nights /month	≥80%	Low-dose ICS Alternative: Cromolyn or LRA*	Low dose ICS Alternative: cromolyn, leukotriene modifier, nedocromil, or theophylline
Step 1 Mild Intermittent	≤ 2 days /week ≤2 nights /month	≥80%	No daily medications	No daily medications

Note: Use spacer/holding chamber with all inhaled steroids
 Preferred therapy shown in bold; * ICS= inhaled corticosteroids; LRA=leukotriene receptor antagonist
 Based on : NAEPP Expert Panel Report: Guidelines for the diagnosis and management of asthma-update on selected topics 2002. National Heart, Lung, and Blood Institute (NIH publ. No. 02-5075). Bethesda, MD, 2002. rev. 6/24/03 Pamela Wood, MD

Children <12 years

Inhaled Steroid	Low Dose	Medium Dose	High Dose
Beclomethasone CFC 42 mcg (Beclivent®/Vanceril®) (80 or 200 puffs/ inhaler)	84-336 mcg 2-8 puffs/day	336-672 mcg 8-16 puffs/day	>672 mcg >16 puffs/day
Budesonide (Pulmicort Turbuhaler®) 200 mcg (200 actuations/ inhaler)	200-400 mcg 1-2 inhalations/day	400-800 mcg 2-4 inhalations/day	>800 mcg >4 inhalations/day
Budesonide (Pulmicort Respules®) 0.25 mg; 0.5 mg/respule (30 respules/ carton)	0.5 mg/day (once daily or bid in divided doses)	1 mg/day (once daily or bid in divided doses)	2 mg/day (once daily or bid in divided doses)
Flunisolide (Aerobid®) 250 mcg/puff	500-750 mcg 2-3 puffs/day	1,000-1,250 mcg 4-5 puffs/day	>1,250 mcg >5 puffs/day
Fluticasone (Flovent®) MDI: 44, 110, 220 mcg/puff (60 or 120 puffs/ inhaler)	88-176 mcg 2-4 puffs/day (44 mcg)	176-440 mcg 2-4 puffs/day (110mcg)	>440 mcg >4 puffs/day (110 mcg) or >2 puffs/day (220 mcg)
Fluticasone/Salmeterol (Advair®): DPI:100, 250, 500 mcg/dose Fluticasone + 50 mcg salmeterol	100-200 mcg	200-400 mcg 1 puff bid (100/50)	>400 mcg 1 puff bid (250/50)
Triamcinolone acetonide 100 mcg/puff (Azmacort®) (240 actuations/ inhaler)	400-800 mcg 4-8 puffs/day	800-1,200 mcg 8-12 puffs/day	>1,200 mcg >12 puffs/day

Adults (>12 years)

Inhaled Steroid	Low Dose	Medium Dose	High Dose
Beclomethasone CFC 42 mcg (Beclivent®/Vanceril®) (80 or 200 puffs/ inhaler)	168-504 mcg 4-12 puffs/day	504-840 mcg 12-20 puffs/day	>840 mcg >20 puffs/day
Beclomethasone HFA (QVAR®) 40 mcg/puff (100 puffs/inhaler) 80 mcg/puff (100 puffs/inhaler)	80-240 mcg/day 2-6 puffs/day (40mcg) 1-3 puffs/day (80mcg)	240-480 mcg/day 6-12 puffs/day (40mcg) 3-6 puffs/day (80mcg)	>480 mcg/day > 6 puffs/day (80mcg)
Budesonide (Pulmicort Turbuhaler®) 200 mcg (200 actuations/ inhaler)	200-600 mcg 1-3 inhalations/day	600-1200 mcg 3-6 inhalations/day	>1200 mcg >6 inhalations/day
Flunisolide (Aerobid®) 250 mcg/puff (100 actuations/ MDI)	500-1000 mcg 2-4 puffs/day	1,000-2,000 mcg 4-8 puffs/day	>2,000 mcg >8 puffs/day
Fluticasone (Flovent®) MDI: 44, 110, 220 mcg/puff (60 or 120 puffs/ inhaler)	88-264 mcg 2-6 puffs/day (44 mcg) 2 puffs/day (110 mcg)	264-660 mcg 2-6 puffs/day (110 mcg)	>660 mcg > 6 puffs/day (110 mcg) or >3 puffs/day (220 mcg)
Fluticasone/Salmeterol(Advair®) DPI: 100, 250, 500 mcg/dose Fluticasone + 50 mcg salmeterol	100-300 mcg 1 puff b.i.d. (100/50)	300-600 mcg 1 puff b.i.d. (250/50)	>600 mcg 1 puff b.i.d. (500/50)
Triamcinolone acetonide 100 mcg/puff (Azmacort®) (240 actuations/ inhaler)	400-1,000 mcg 4-10 puffs/day	1,000-2,000 mcg 10-20 puffs/day	>2,000 mcg >20 puffs/day

My Asthma Plan

Patient Name: _____

Medical Record #: _____

Physician's Name: _____

DOB: _____


Physician's Phone #: _____ Completed by: _____ Date: _____

Controller Medicines	How Much to Take	How Often	Other Instructions
		_____ times per day EVERYDAY!	
		_____ times per day EVERYDAY!	
		_____ times per day EVERYDAY!	
		_____ times per day EVERYDAY!	
Quick-Relief Medicines	How Much to Take	How Often	Other Instructions
		Take ONLY as needed	NOTE: If this medicine is needed frequently, call physician to consider increasing controller medications.

Special instructions when I feel ● *good*, ● *not good*, and ● *awful*.

GREEN ZONE

I feel *good*.



(My peak flow is in the **GREEN** zone.)

YELLOW ZONE

I do *not* feel *good*.

(My peak flow is in the **YELLOW** zone.)

My symptoms may include one or more of the following:

- Wheeze
- Tight chest
- Cough
- Shortness of breath
- Waking up at night with asthma symptoms
- Decreased ability to do usual activities

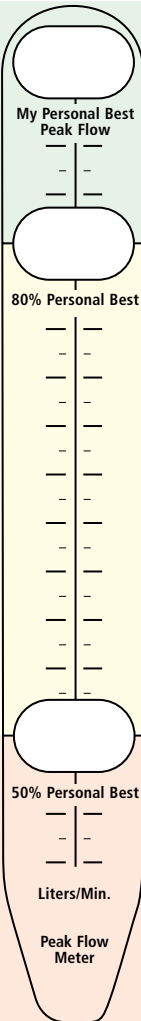
RED ZONE

I feel *awful*.

(My peak flow is in the **RED** zone.)

Warning signs may include one or more of the following:

- Its getting harder and harder to breathe
- Unable to sleep or do usual activities because of trouble breathing



Liters/Min.
Peak Flow Meter

PREVENT asthma symptoms everyday:

- Take my controller medicines (above) everyday.
- Before exercise, take _____ puffs of _____
- Avoid things that make my asthma worse like: _____

CAUTION. I should continue taking my everyday controller asthma medicines AND:

- Take _____

If I still do not feel good, or my peak flow is not back in the **Green Zone** within one hour, then I should:

- Increase _____
- Add _____
- Call _____

MEDICAL ALERT! Get help!

- Take _____ until I get help immediately.
- Take _____
- Call _____

Danger! Get help immediately!

Call 911 if trouble walking or talking due to shortness of breath or lips or fingernails are gray or blue.

Mi Plan de Asma

Nombre del paciente: _____

del expediente médico: _____

Nombre del doctor: _____

Fecha de nacimiento: _____


Teléfono: _____ Realizado por: _____ Fecha: _____

Medicamentos de uso diario	Cuanto Tomar	Cuantas Veces	Otras Instrucciones
		_____ veces al día CADA DIA	
		_____ veces al día CADA DIA	
		_____ veces al día CADA DIA	
		_____ veces al día CADA DIA	
Medicamentos de efecto rápido	Cuanto Tomar	Cuantas Veces	Otras Instrucciones
		Tomar sólo cuando lo necesite	NOTA: si necesita esta medicina frecuentemente, llame a su médico para ver si debe de aumentar el medicamento de uso diario.

Instrucciones especiales cuando me siento ● *bien*, ● *mal*, y ● *muy mal*.

ZONA VERDE

Me siento *bien*.
(Mi flujo de aire máximo está en la zona VERDE.)




ZONA AMARILLA

Me siento *mal*.
(Mi flujo de aire máximo está en la zona AMARILLA.)

Mis síntomas incluyen uno o más de los siguientes:

- Silbido al respirar
- Sensación de opresión en el pecho
- Tos
- Falta de aliento
- Despertar por la noche con síntomas de asma
- Menos energía para las actividades diarias




ZONA ROJA

Me siento *muy mal*.
(Mi flujo de aire máximo está en la zona ROJA.)

Los signos indicativos incluyen uno o más de los siguientes:

- Se me hace más y más difícil respirar
- La falta de respiración no me deja dormir o hacer actividades de costumbre



Mi flujo de aire máximo

80% de mi flujo de aire máximo

50% de mi flujo de aire máximo

Liters/Min.

Peak Flow Meter

EVITAR: síntomas del asma todos los días

- Tomar las medicinas indicadas arriba todos los días.
- Antes de hacer ejercicio tomar _____ inhalaciones _____
- Evitar cosas que empeoren mi asma tales como: _____

PRECAUCIÓN: debo seguir tomando la medicina de uso diario y:

- Tomar _____

Si todavía no me siento bien o mi flujo de aire máximo no está en la **Zona Verde** dentro una hora, entonces debo de:

- Aumentar _____
- Añadir _____
- Llamar a _____

¡ALERTA! ¡Obtenga ayuda médica!

- Tomar _____ inmediatamente, hasta que reciba ayuda.
- Tomar _____
- Llamar a _____

¡Peligro! ¡Obtenga ayuda de inmediato! Llame al 911, si tiene problemas al caminar o al hablar por la falta de aliento o si sus labios o las uñas están grises o moradas.

Child Asthma Plan

0 - 5 year olds

Patient Name: _____

Medical Record #: _____


Healthcare Provider's Name: _____ DOB: _____

Healthcare Provider's Phone #: _____ Completed by: _____ Date: _____

Controller Medicines (Use Everyday to Stay Healthy)	How Much to Take	How Often	Other Instructions (such as spacers/masks, nebulizers)
		_____ times per day EVERYDAY!	
		_____ times per day EVERYDAY!	
		_____ times per day EVERYDAY!	
		_____ times per day EVERYDAY!	
Quick-Relief Medicines	How Much to Take	How Often	Other Instructions
		Give ONLY as needed	NOTE: If this medicine is needed often (_____ times per week), call physician.

GREEN ZONE

Child is well and has no asthma symptoms, even during active play.



PREVENT asthma symptoms everyday:

- Give the above controller medicines everyday.
- Avoid things that make the child's asthma worse:
 - Avoid tobacco smoke; ask people to smoke outside.
 - _____
 - _____

YELLOW ZONE

Child is not well and has asthma symptoms that may include:

- Coughing
- Wheezing
- Runny nose or other cold symptoms
- Breathing harder or faster
- Awakening due to coughing or difficulty breathing
- Playing less than usual
- _____
- _____

Other symptoms that could indicate that your child is having trouble breathing may include: difficulty feeding (grunting sounds, poor sucking), changes in sleep patterns, cranky and tired, decreased appetite.

CAUTION. Take action by continuing to give regular everyday asthma medicines AND:

- Give _____
(include dose and frequency)

If the child is not in the **Green Zone** and still has symptoms after one hour, then:

- Give more _____
(include dose and frequency)
- _____
(include dose and frequency)
- Call _____
(include dose and frequency)

RED ZONE

Child feels awful! Warning signs may include:

- Child's wheeze, cough or difficulty breathing continues or worsens, even after giving yellow zone medicines.
- Child's breathing is so hard that he/she is having trouble walking / talking / eating / playing.
- Child is drowsy or less alert than normal.

MEDICAL ALERT! Get help!

- Take the child to the hospital or call 911 immediately!
- Give more _____ until you get help. (include dose and frequency)
- Give _____ (include dose and frequency)

Danger! Get help immediately!

- Call 911 if:
 - The child's skin is sucked in around neck and ribs; or
 - Lips and/or fingernails are grey or blue; or
 - Child doesn't respond to you.

Plan Para el Asma Infantil

Para niños de 0 a 5 años de edad

Patient Name: _____

Medical Record #: _____

Nombre del médico: _____

DOB: _____


Teléfono del médico: _____

Llenado por: _____ Fecha: _____

Medicamentos de control (usar todos los días para mantenerlo sano)	Dosis	Cuántas veces	Otras instrucciones (por ejemplo: espaciadores/máscaras, nebulizadores)
		_____ veces por día ¡TODOS LOS DÍAS!	
		_____ veces por día ¡TODOS LOS DÍAS!	
		_____ veces por día ¡TODOS LOS DÍAS!	
		_____ veces por día ¡TODOS LOS DÍAS!	
Medicamentos para alivio rápido	Dosis	Cuántas veces	Otras instrucciones
		Dar SÓLO cuando se necesita	NOTA: Si necesita este medicamento a menudo (_____ veces por semana), llame al médico.

ZONA VERDE

El niño está bien
y no tiene síntomas de asma, incluso durante el juego activo



- PREVENGA** los síntomas del asma todos los días:
- Dé al niño los medicamentos de control todos los días.
 - Evite las cosas que empeoran el asma del niño.
 - Evite el humo del tabaco; pida que fumen afuera.
 - _____
 - _____

ZONA AMARILLA

El niño no está bien y tiene síntomas de asma, que pueden incluir:

- Tos
- Silbido
- Síntomas de resfriado
- Respira más fuerte o más rápido
- Despertarse a causa de la tos o de la dificultad para respirar
- Juega menos de lo normal
- _____
- _____

Otros síntomas que pueden indicar que su hijo tiene problemas para respirar incluyen: dificultad para darle de comer (hace gruñidos o mama mal), cambios en los patrones de sueño, estar malhumorado y cansado, tener menos apetito.

- PRECAUCIÓN:** Tome acción y siga dándole los medicamentos para el asma todos los días, de manera regular, Y:
- Déle _____
(include dose and frequency)
- Si el niño no está en la **Zona Verde** y sigue con síntomas después de una hora, entonces:
- Déle mas _____
(include dose and frequency)
 - _____
(include dose and frequency)
 - Llame _____
(include dose and frequency)

ZONA ROJA

¡El niño se siente muy mal!
Las señales de advertencia pueden incluir:

- El niño silba, tose o tiene dificultad para respirar y continúa empeorando, incluso después de darle los medicamentos de la zona amarilla.
- El niño respira rapido y le cuesta trabajo caminar, hablar, comer o jugar.
- El niño está somnoliento o menos alerta de lo normal.

- ¡ALERTA MÉDICA! ¡Obtenga ayuda!**
- ¡Lleve al niño al hospital o llame al 911 inmediatamente!
 - Déle mas _____
(include dose and frequency) hasta que obtenga ayuda.
 - Déle _____
(include dose and frequency)

¡Peligro! ¡Obtenga ayuda inmediatamente!

- llame al 911 si:
- la piel del niño está retraída entre las costillas
- tiene los labios o las uñas morados o azules
- el niño no le responde.

PROVIDER INSTRUCTIONS FOR ASTHMA ACTION PLAN (Adults and Children over 5)

- DETERMINE THE LEVEL OF ASTHMA SEVERITY** (see Table 1)
- FILL IN MEDICATIONS**
Fill in medications appropriate to that level (see Table 1) and include instructions, such as "shake well before using", "use with spacer", and "rinse mouth after using".
- FILL IN PEAK FLOW VALUES AND/OR SYMPTOMS**
Patients over the age of six may be given peak flow meters to monitor their asthma. Fill in the values for the patient's personal best peak flow in the green section (if a personal best has not been established, use a predicted peak flow from outside reference charts). Use 80% of the personal best value in the yellow section, and 50% in the red. See peak flow chart (Table 2) below to help with the calculation. Review symptoms in each zone and write individualized symptoms in blank lines.
- ADDRESS ISSUES RELATED TO ASTHMA SEVERITY**
These can include allergens, smoke, rhinitis, sinusitis, gastroesophageal reflux, sulfite sensitivity, medication interactions, occupational exposures, and viral respiratory infections.

TABLE 1: Severity and medication chart (When categorizing, an individual should be assigned to the most severe grade in which any one feature occurs.)

	Mild Intermittent	Mild Persistent	Moderate Persistent	Severe Persistent
Days with Symptoms	≤ 2 / week	> 2 / week but ≤ 1 / day	Daily	Continuous
Nighttime Symptoms	≤ 2 / month	> 2 / month	> 1 / week	Frequent
PEF or FEV₁ *	≥ 80%	≥ 80%	> 60% - < 80%	≤ 60%
PEF Variability	< 20%	20-30%	> 30%	> 30%
Long Term Control Daily Medicines	No daily medication needed.	One daily medication: <ul style="list-style-type: none"> ◆ Inhaled corticosteroid (low dose) OR ◆ Cromolyn OR nedocromil OR ◆ A leukotriene modifier (check age specifications) OR ◆ Sustained-release theophylline (but not preferred therapy) 	One to two daily medications: <ul style="list-style-type: none"> ◆ An anti-inflammatory (medium dose) OR, especially if nighttime symptoms: An anti-inflammatory <ul style="list-style-type: none"> ◆ Inhaled corticosteroid (low, medium, or high dose) AND a <u>long-acting bronchodilator</u>	Three daily medications: An anti-inflammatory <ul style="list-style-type: none"> ◆ inhaled corticosteroid (high dose) AND a <u>long-acting bronchodilator</u> <ul style="list-style-type: none"> ◆ long-acting inhaled beta₂-agonist OR ◆ sustained-release theophylline OR ◆ long-acting beta₂-agonist tablets AND corticosteroid tablets or syrup long term

* Percent predicted values for forced expiratory volume in 1 second (FEV₁) and percent of personal best for peak expiratory flow (PEF) (children 6 years old or older who can use these devices)

TABLE 2: Peak flow value calculation chart (100%, 80%, 50%)

Green - 100%	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390
Yellow - 80%	80	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	280	288	296	304	312
Red - 50%	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195
Green - 100%	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690
Yellow - 80%	320	328	336	344	352	360	368	376	384	392	400	408	416	424	432	440	448	456	464	472	480	488	496	504	512	520	528	536	544	552
Red - 50%	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345

This Asthma Action Plan was developed by a committee facilitated by the Regional Asthma Management and Prevention (RAMPP) Initiative, a program of the Public Health Institute. It is based on the recommendations from the National Heart, Lung, and Blood Institute's, "Guidelines for the Diagnosis and Management of Asthma," NIH Publication No. 97-4051 (April 1997). The information contained herein is intended for the use and convenience of physicians and other medical personnel, and may not be appropriate for use in all circumstances. Decisions to adopt any particular recommendation must be made by qualified medical personnel in the light of available resources and the circumstances presented by individual patients. Neither the Public Health Institute nor the individuals, and institutional participants in the RAMPP Initiative make any warranty or guarantee, express or implied, of the quality, fitness, performance or results of use of the information or products described in the form or the Guidelines. For additional information, please contact RAMPP at (510) 883-9980. <http://www.rampasthma.org>

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PROVIDER INSTRUCTIONS FOR ASTHMA ACTION PLAN (Children ages 0-5)

- DETERMINE THE LEVEL OF ASTHMA SEVERITY** (see Table 1)
- FILL IN MEDICATIONS**
Fill in medications appropriate to that level (see Table 1) and include instructions, such as “shake well before using”, “use with spacer”, and “rinse mouth after using”.
- ADDRESS ISSUES RELATED TO ASTHMA SEVERITY**
These can include allergens, smoke, rhinitis, sinusitis, gastroesophageal reflux, sulfite sensitivity, medication interactions, and viral respiratory infections.
- FILL IN AND REVIEW ACTION STEPS**
Complete the recommendations for action in the different zones, and review the whole plan with the family so they are clear on how to adjust the medications, and when to call for help.
- DISTRIBUTE COPIES OF THE PLAN**
Give the top copy of the plan to the family, the next one to school, day care, caretaker, or other involved third party as appropriate, and file the last copy in the chart.
- REVIEW ACTION PLAN REGULARLY (Step Up / Step Down Therapy)**
A patient who is always in the green zone for some months may be a candidate to “step down” and be reclassified to a lower level of asthma severity and treatment. A patient frequently in the yellow or red zone should be assessed to make sure inhaler technique is correct, adherence is good, environmental factors are not interfering with treatment, and alternative diagnoses have been considered. If these considerations are met, the patient should “step up” to a higher classification of asthma severity and treatment. Be sure to fill out a new asthma action plan when changes in treatment are made.

TABLE 1: Severity and medication chart (classification is based on meeting at least one criterion)

	Severe Persistent	Moderate Persistent	Mild Persistent	Mild Intermittent
Symptoms/Day	Continual symptoms	Daily symptoms	> 2 days/week but < 1 time/day	< 2 days/week
Symptoms/Night	Frequent	> 1 night/week	> 2 nights/month	< 2 nights/month
Long Term Control¹	<p>Preferred treatment:</p> <ul style="list-style-type: none"> • Daily <u>high-dose</u> inhaled corticosteroid AND • Long-acting inhaled B₂ - agonist <p>AND, if needed:</p> <ul style="list-style-type: none"> • Corticosteroid tablets or syrup long term (2 mg/kg/day, generally do not exceed 60 mg per day). (Make repeated attempts to reduce systemic corticosteroids and maintain control with high-dose inhaled corticosteroids.) 	<p>Preferred treatment:</p> <ul style="list-style-type: none"> • Daily <u>low-dose</u> inhaled corticosteroid and long-acting inhaled B₂ - agonist OR • Daily <u>medium-dose</u> inhaled corticosteroid <p>Alternative treatment:</p> <ul style="list-style-type: none"> • Daily <u>low-dose</u> inhaled corticosteroid and either leukotriene receptor antagonist or theophylline <p>.....</p> <p>If needed (particularly in patients with recurring severe exacerbations):</p> <p>Preferred treatment:</p> <ul style="list-style-type: none"> • Daily <u>medium-dose</u> inhaled corticosteroid and long-acting B₂ – agonist <p>Alternative treatment:</p> <ul style="list-style-type: none"> • Daily <u>medium-dose</u> inhaled corticosteroid and either leukotriene receptor antagonist or theophylline 	<p>Preferred treatment:</p> <ul style="list-style-type: none"> • Daily <u>low-dose</u> inhaled corticosteroid (with nebulizer or MDI with holding chamber with or without face mask or DPI) <p>Alternative treatment:</p> <ul style="list-style-type: none"> • Cromolyn (nebulizer is preferred or MDI with holding chamber) OR • Leukotriene receptor antagonist <p>Note: Initiation of long-term controller therapy should be considered if child has had more than three episodes of wheezing in the past year that lasted more than one day and affected sleep and who have risk factors for the development of asthma.²</p>	<p>No daily medication needed.</p>
Quick Relief¹	<p>Consultation With Asthma Specialist Recommended</p> <p>Preferred treatment:</p> <ul style="list-style-type: none"> • Inhaled short-acting B₂- agonist <p>Alternative treatment:</p> <ul style="list-style-type: none"> • Oral B₂ - agonist 	<p>Consultation With Asthma Specialist Recommended</p> <p>Preferred treatment:</p> <ul style="list-style-type: none"> • Inhaled short-acting B₂ - agonist <p>Alternative treatment:</p> <ul style="list-style-type: none"> • Oral B₂ - agonist 	<p>Consider Consultation With Asthma Specialist</p> <p>Preferred treatment:</p> <ul style="list-style-type: none"> • Inhaled short-acting B₂ - agonist <p>Alternative treatment:</p> <ul style="list-style-type: none"> • Oral B₂ - agonist 	<p>Preferred Treatment:</p> <ul style="list-style-type: none"> • Inhaled short-acting B₂-agonist • Alternative Treatment • Oral B₂ - agonist

¹ For infants and children use spacer **AND** MASK.

² Risk factors for the development of asthma are parental history of asthma, physician-diagnosed atopic dermatitis, or two of the following: physician-diagnosed allergic rhinitis, wheezing apart from colds, peripheral blood eosinophilia. With viral respiratory infection, use bronchodilator every 4-6 hours up to 24 hours (longer with physician consult); in general no more than once every six weeks. If patient has seasonal asthma on a predictable basis, long-term anti-inflammatory therapy (inhaled corticosteroids, cromolyn) should be initiated prior to the anticipated onset of symptoms and continued through the season.

This Asthma Plan was developed by a committee facilitated by the Childhood Asthma Initiative, a program funded by the California Children and Families Commission, and the Regional Asthma Management and Prevention (RAMP) Initiative, a program of the Public Health Institute. This plan is based on the recommendations from the National Heart, Lung, and Blood Institute’s, “Guidelines for the Diagnosis and Management of Asthma,” NIH Publication No. 97-4051 (April 1997) and “Update on Selected Topics 2002,” NIH Publication No. 02-5075 (June 2002). The information contained herein is intended for the use and convenience of physicians and other medical personnel, and may not be appropriate for use in all circumstances. Decisions to adopt any particular recommendation must be made by individual medical personnel in light of available resources and the circumstances presented by individual patients. No entity or individual involved in the funding or development of this plan makes any warranty guarantee, express or implied, of the quality, fitness, performance or results of use of the information or products described in the plan or the Guidelines. For additional information, please contact RAMP at (510)622-4438, <<http://www.rampasthma.org>>.