

1 PRESCRIBING INFORMATION

2 **FLOVENT[®] HFA 44 mcg**
3 **(fluticasone propionate HFA 44 mcg)**
4 **Inhalation Aerosol**

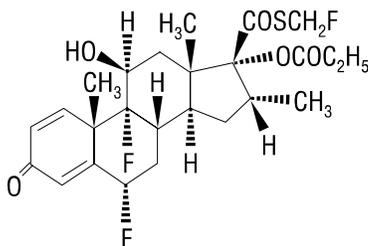
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6 **FLOVENT[®] HFA 110 mcg**
7 **(fluticasone propionate HFA 110 mcg)**
8 **Inhalation Aerosol**

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10 **FLOVENT[®] HFA 220 mcg**
11 **(fluticasone propionate HFA 220 mcg)**
12 **Inhalation Aerosol**

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14 **For Oral Inhalation Only**

15 **DESCRIPTION**

16 The active component of FLOVENT HFA 44 mcg Inhalation Aerosol, FLOVENT HFA
17 110 mcg Inhalation Aerosol, and FLOVENT HFA 220 mcg Inhalation Aerosol is fluticasone
18 propionate, a corticosteroid having the chemical name *S*-(fluoromethyl) 6 α ,9-difluoro-11 β ,17-
19 dihydroxy-16 α -methyl-3-oxoandrosta-1,4-diene-17 β -carbothioate, 17-propionate and the
20 following chemical structure:
21



22
23
24 Fluticasone propionate is a white to off-white powder with a molecular weight of 500.6, and
25 the empirical formula is C₂₅H₃₁F₃O₅S. It is practically insoluble in water, freely soluble in
26 dimethyl sulfoxide and dimethylformamide, and slightly soluble in methanol and 95% ethanol.

27 FLOVENT HFA 44 mcg Inhalation Aerosol, FLOVENT HFA 110 mcg Inhalation Aerosol,
28 and FLOVENT HFA 220 mcg Inhalation Aerosol are pressurized, metered-dose aerosol units
29 intended for oral inhalation only. Each unit contains a microcrystalline suspension of fluticasone
30 propionate (micronized) in propellant HFA-134a (1,1,1,2-tetrafluoroethane). It contains no other
31 excipients.

32 After priming, each actuation of the inhaler delivers 50, 125, or 250 mcg of fluticasone
33 propionate in 60 mg of suspension (for the 44-mcg product) or in 75 mg of suspension (for the

34 110- and 220-mcg products) from the valve and 44, 110, or 220 mcg, respectively, of fluticasone
35 propionate from the actuator. The actual amount of drug delivered to the lung may depend on
36 patient factors, such as the coordination between the actuation of the device and inspiration
37 through the delivery system.

38 Each 10.6-g canister (44 mcg) and each 12-g canister (110 and 220 mcg) provides
39 120 inhalations.

40 FLOVENT HFA should be primed before using for the first time by releasing 4 test sprays
41 into the air away from the face, shaking well before each spray. In cases where the inhaler has
42 not been used for more than 7 days or when it has been dropped, prime the inhaler again by
43 shaking well and releasing 1 test spray into the air away from the face.

44 This product does not contain any chlorofluorocarbon (CFC) as the propellant.

45 **CLINICAL PHARMACOLOGY**

46 **Mechanism of Action:** Fluticasone propionate is a synthetic trifluorinated corticosteroid with
47 potent anti-inflammatory activity. In vitro assays using human lung cytosol preparations have
48 established fluticasone propionate as a human corticosteroid receptor agonist with an affinity 18
49 times greater than dexamethasone, almost twice that of beclomethasone-17-monopropionate
50 (BMP), the active metabolite of beclomethasone dipropionate, and over 3 times that of
51 budesonide. Data from the McKenzie vasoconstrictor assay in man are consistent with these
52 results. The clinical significance of these findings is unknown.

53 Inflammation is an important component in the pathogenesis of asthma. Corticosteroids have
54 been shown to inhibit multiple cell types (e.g., mast cells, eosinophils, basophils, lymphocytes,
55 macrophages, and neutrophils) and mediator production or secretion (e.g., histamine,
56 eicosanoids, leukotrienes, and cytokines) involved in the asthmatic response. These
57 anti-inflammatory actions of corticosteroids contribute to their efficacy in asthma.

58 Though effective for the treatment of asthma, corticosteroids do not affect asthma symptoms
59 immediately. Individual patients will experience a variable time to onset and degree of symptom
60 relief. Maximum benefit may not be achieved for 1 to 2 weeks or longer after starting treatment.
61 When corticosteroids are discontinued, asthma stability may persist for several days or longer.

62 Studies in patients with asthma have shown a favorable ratio between topical
63 anti-inflammatory activity and systemic corticosteroid effects with recommended doses of orally
64 inhaled fluticasone propionate. This is explained by a combination of a relatively high local
65 anti-inflammatory effect, negligible oral systemic bioavailability (<1%), and the minimal
66 pharmacological activity of the only metabolite detected in man.

67 **Preclinical:** Propellant HFA-134a is devoid of pharmacological activity except at very high
68 doses in animals (380 to 1,300 times the maximum human exposure based on comparisons of
69 AUC values), primarily producing ataxia, tremors, dyspnea, or salivation. These are similar to
70 effects produced by the structurally related CFCs, which have been used extensively in
71 metered-dose inhalers.

72 In animals and humans, propellant HFA-134a was found to be rapidly absorbed and rapidly
73 eliminated, with an elimination half-life of 3 to 27 minutes in animals and 5 to 7 minutes in
74 humans. Time to maximum plasma concentration (T_{max}) and mean residence time are both
75 extremely short, leading to a transient appearance of HFA-134a in the blood with no evidence of
76 accumulation.

77 **Pharmacokinetics: Absorption:** Fluticasone propionate acts locally in the lung; therefore,
78 plasma levels do not predict therapeutic effect. Studies using oral dosing of labeled and
79 unlabeled drug have demonstrated that the oral systemic bioavailability of fluticasone propionate
80 is negligible (<1%), primarily due to incomplete absorption and presystemic metabolism in the
81 gut and liver. In contrast, the majority of the fluticasone propionate delivered to the lung is
82 systemically absorbed. Systemic exposure as measured by AUC in healthy subjects (N = 24)
83 from 8 inhalations, as a single dose, of HFA 134a-propelled fluticasone propionate using the 44-,
84 110-, and 220-mcg strengths increased proportionally with dose. The geometric means (95% CI)
85 of $AUC_{0-24\text{ hr}}$ for the 44-, 110-, and 220-mcg strengths were 488 (362 to 657); 1,284 (904 to
86 1,822); and 2,495 (1,945 to 3,200) $\text{pg}\cdot\text{hr/mL}$, respectively, and the geometric means of C_{max} were
87 126 (108 to 148), 254 (202 to 319), and 421 (338 to 524) pg/mL , respectively. Systemic
88 exposure from the 220-mcg HFA 134a-propelled fluticasone propionate inhaler was 30% lower
89 than that from the CFC 11/12-propelled fluticasone propionate inhaler. Systemic exposure was
90 measured in subjects with asthma from 2 inhalations of HFA 134a-propelled fluticasone
91 propionate using the 44-mcg (N = 20), 110-mcg (N = 15), or 220-mcg (N = 17) strength inhalers
92 twice daily for at least 4 weeks. The geometric means (95% CI) of $AUC_{0-12\text{ hr}}$ for the 44-, 110-,
93 and 220-mcg strengths were 76 (33 to 175), 298 (191 to 464), and 601 (431 to 838) $\text{pg}\cdot\text{hr/mL}$,
94 respectively. C_{max} occurred in about 1 hour, and the geometric means were 25 (18 to 36), 61 (46
95 to 81), and 103 (73 to 145) pg/mL , respectively.

96 **Distribution:** Following intravenous administration, the initial disposition phase for
97 fluticasone propionate was rapid and consistent with its high lipid solubility and tissue binding.
98 The volume of distribution averaged 4.2 L/kg.

99 The percentage of fluticasone propionate bound to human plasma proteins averages 91%.
100 Fluticasone propionate is weakly and reversibly bound to erythrocytes and is not significantly
101 bound to human transcortin.

102 **Metabolism:** The total clearance of fluticasone propionate is high (average, 1,093 mL/min),
103 with renal clearance accounting for less than 0.02% of the total. The only circulating metabolite
104 detected in man is the 17β -carboxylic acid derivative of fluticasone propionate, which is formed
105 through the cytochrome P450 3A4 pathway. This metabolite had less affinity (approximately
106 1/2,000) than the parent drug for the corticosteroid receptor of human lung cytosol in vitro and
107 negligible pharmacological activity in animal studies. Other metabolites detected in vitro using
108 cultured human hepatoma cells have not been detected in man.

109 **Elimination:** Following intravenous dosing, fluticasone propionate showed polyexponential
110 kinetics and had a terminal elimination half-life of approximately 7.8 hours. Less than 5% of a

111 radiolabeled oral dose was excreted in the urine as metabolites, with the remainder excreted in
112 the feces as parent drug and metabolites.

113 **Special Populations: Hepatic Impairment:** Since fluticasone propionate is
114 predominantly cleared by hepatic metabolism, impairment of liver function may lead to
115 accumulation of fluticasone propionate in plasma. Therefore, patients with hepatic disease
116 should be closely monitored.

117 **Gender:** Systemic exposure for 19 male and 33 female subjects with asthma from
118 2 inhalations of fluticasone propionate inhalation aerosol using the 44-, 110-, and 220-mcg
119 strengths twice daily was similar.

120 **Other:** Formal pharmacokinetic studies using fluticasone propionate have not been
121 conducted in other special populations.

122 **Drug Interactions:** Fluticasone propionate is a substrate of cytochrome P450 3A4.
123 Coadministration of fluticasone propionate and the highly potent cytochrome P450 3A4 inhibitor
124 ritonavir is not recommended based upon a multiple-dose, crossover drug interaction study in 18
125 healthy subjects. Fluticasone propionate aqueous nasal spray (200 mcg once daily) was
126 coadministered for 7 days with ritonavir (100 mg twice daily). Plasma fluticasone propionate
127 concentrations following fluticasone propionate aqueous nasal spray alone were undetectable
128 (<10 pg/mL) in most subjects, and when concentrations were detectable peak levels (C_{max}
129 averaged 11.9 pg/mL [range, 10.8 to 14.1 pg/mL] and $AUC_{(0-\tau)}$ averaged 8.43 pg•hr/mL [range,
130 4.2 to 18.8 pg•hr/mL]). Fluticasone propionate C_{max} and $AUC_{(0-\tau)}$ increased to 318 pg/mL (range,
131 110 to 648 pg/mL) and 3,102.6 pg•hr/mL (range, 1,207.1 to 5,662.0 pg•hr/mL), respectively,
132 after coadministration of ritonavir with fluticasone propionate aqueous nasal spray. This
133 significant increase in plasma fluticasone propionate exposure resulted in a significant decrease
134 (86%) in plasma cortisol area under the plasma concentration versus time curve (AUC).

135 Caution should be exercised when other potent cytochrome P450 3A4 inhibitors are
136 coadministered with fluticasone propionate. In a drug interaction study, coadministration of
137 orally inhaled fluticasone propionate (1,000 mcg) and ketoconazole (200 mg once daily) resulted
138 in increased plasma fluticasone propionate exposure and reduced plasma cortisol AUC, but had
139 no effect on urinary excretion of cortisol.

140 In another multiple-dose drug interaction study, coadministration of orally inhaled fluticasone
141 propionate (500 mcg twice daily) and erythromycin (333 mg 3 times daily) did not affect
142 fluticasone propionate pharmacokinetics.

143 Similar definitive studies with HFA 134a-propelled fluticasone propionate were not
144 performed, but results should be independent of the formulation and drug delivery device.

145 **Pharmacodynamics:** Serum cortisol concentrations, urine cortisol excretion, and urine
146 6- β -hydroxycortisol excretion were collected over 24 hours in 24 healthy subjects following
147 8 inhalations of HFA 134a-propelled fluticasone propionate (44, 110, and 220 mcg) decreased
148 with increasing dose. However, in subjects with asthma treated with 2 inhalations of HFA
149 134a-propelled fluticasone propionate (44, 110, and 220 mcg) twice daily for at least 4 weeks,
150 differences in serum cortisol concentrations (N = 65) and urine cortisol excretion (N = 47)

151 compared with placebo were not related to dose and generally not significant. In the study with
152 healthy volunteers, the effect of propellant was also evaluated by comparing results following
153 the 220-mcg strength inhaler containing HFA 134a propellant with the same strength of inhaler
154 containing CFC 11/12 propellant. A lesser effect on the HPA axis with the HFA formulation was
155 observed for serum cortisol, but not urine cortisol and 6-betahydroxy cortisol excretion.

156 The potential systemic effects of HFA 134a-propelled fluticasone propionate on the
157 hypothalamic-pituitary-adrenal (HPA) axis were also studied in patients with asthma.
158 Fluticasone propionate given by inhalation aerosol at dosages of 440 or 880 mcg twice daily was
159 compared with placebo in oral corticosteroid-dependent subjects with asthma (range of mean
160 dose of prednisone at baseline, 13 to 14 mg/day) in a 16-week study. Consistent with
161 maintenance treatment with oral corticosteroids, abnormal plasma cortisol responses to short
162 cosyntropin stimulation (peak plasma cortisol <18 mcg/dL) were present at baseline in the
163 majority of subjects participating in this study (69% of patients later randomized to placebo and
164 72% to 78% of patients later randomized to HFA 134a-propelled fluticasone propionate). At
165 week 16, 8 subjects (73%) on placebo compared to 14 (54%) and 13 (68%) subjects receiving
166 HFA 134a-propelled fluticasone propionate (440 and 880 mcg b.i.d., respectively) had
167 post-stimulation cortisol levels of <18 mcg/dL.

168 To confirm that systemic absorption does not play a role in the clinical response to inhaled
169 fluticasone propionate, a double-blind clinical study comparing inhaled fluticasone propionate
170 powder and oral fluticasone propionate was conducted. Fluticasone propionate inhalation powder
171 in doses of 100 and 500 mcg twice daily was compared to oral fluticasone propionate
172 20,000 mcg once daily and placebo for 6 weeks. Plasma levels of fluticasone propionate were
173 detectable in all 3 active groups, but the mean values were highest in the oral group. Both
174 dosages of inhaled fluticasone propionate were effective in maintaining asthma stability and
175 improving lung function, while oral fluticasone propionate and placebo were ineffective. This
176 demonstrates that the clinical effectiveness of inhaled fluticasone propionate is due to its direct
177 local effect and not to an indirect effect through systemic absorption.

178 **CLINICAL TRIALS**

179 Three randomized, double-blind, parallel-group, placebo-controlled clinical trials were
180 conducted in the US in 980 adolescent and adult patients (≥ 12 years of age) with asthma to
181 assess the efficacy and safety of FLOVENT HFA in the treatment of asthma. Fixed dosages of
182 88, 220, and 440 mcg twice daily (each dose administered as 2 inhalations of the 44-, 110-, and
183 220-mcg strengths, respectively) and 880 mcg twice daily (administered as 4 inhalations of the
184 220-mcg strength) were compared with placebo to provide information about appropriate dosing
185 to cover a range of asthma severity. Patients in these studies included those inadequately
186 controlled with bronchodilators alone (Study 1), those already receiving inhaled corticosteroids
187 (Study 2), and those requiring oral corticosteroid therapy (Study 3). In all 3 studies, patients
188 (including placebo-treated patients) were allowed to use VENTOLIN[®] (albuterol, USP)

189 Inhalation Aerosol as needed for relief of acute asthma symptoms. In Studies 1 and 2, other
190 maintenance asthma therapies were discontinued.

191 Study 1 enrolled 397 patients with asthma inadequately controlled on bronchodilators alone.
192 FLOVENT HFA was evaluated at dosages of 88, 220, and 440 mcg twice daily for 12 weeks.
193 Baseline FEV₁ values were similar across groups (mean 67% of predicted normal). All 3 dosages
194 of FLOVENT HFA significantly improved asthma control as measured by improvement in AM
195 pre-dose FEV₁ compared with placebo. Pulmonary function (AM pre-dose FEV₁) improved
196 significantly with FLOVENT HFA compared with placebo after the first week of treatment, and
197 this improvement was maintained over the 12-week treatment period.

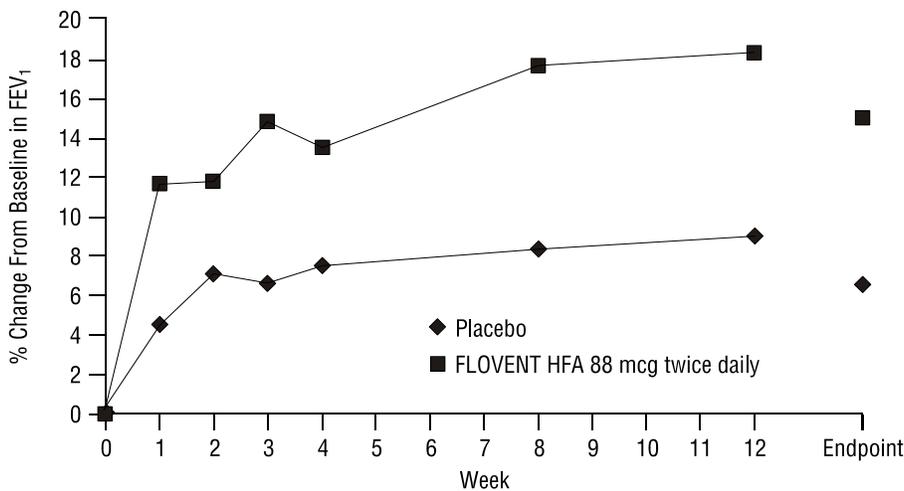
198 At Endpoint (last observation), mean change from baseline in AM pre-dose percent predicted
199 FEV₁ was greater in all 3 groups treated with FLOVENT HFA (9.0% to 11.2%) compared with
200 the placebo group (3.4%). The mean differences between the groups treated with
201 FLOVENT HFA 88, 220, and 440 mcg and the placebo group were significant, and the
202 corresponding 95% confidence intervals were (2.2%, 9.2%), (2.8%, 9.9%), and (4.3%, 11.3%),
203 respectively.

204 Figure 1 displays results of pulmonary function tests (mean percent change from baseline in
205 FEV₁ prior to AM dose) for the recommended starting dosage of FLOVENT HFA (88 mcg twice daily)
206 and placebo from Study 1. This trial used predetermined criteria for lack of efficacy
207 (indicators of worsening asthma), resulting in withdrawal of more patients in the placebo group.
208 Therefore, pulmonary function results at Endpoint (the last evaluable FEV₁ result, including
209 most patients' lung function data) are also displayed.

210

211 **Figure 1. A 12-Week Clinical Trial in Patients Inadequately Controlled on**
212 **Bronchodilators Alone: Mean Percent Change From Baseline in FEV₁ Prior**
213 **to AM Dose (Study 1)**

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215

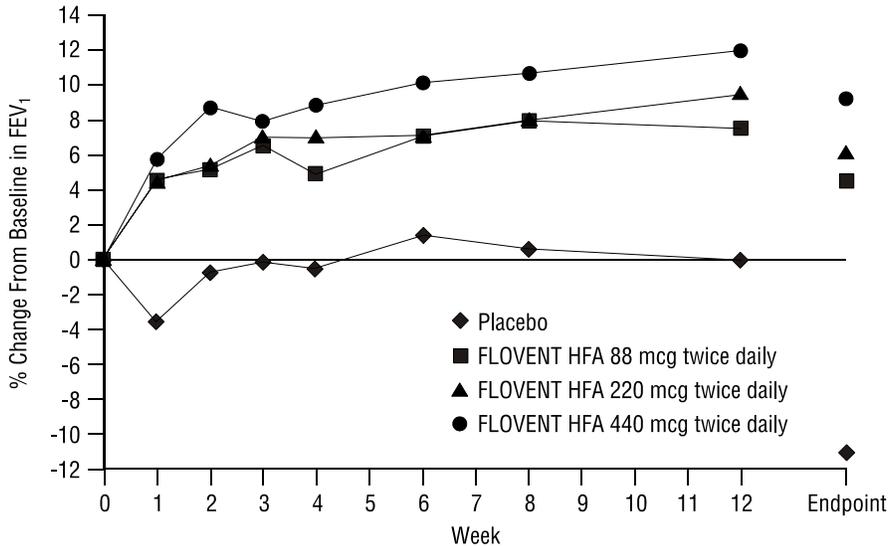
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217 In Study 2, FLOVENT HFA at dosages of 88, 220, and 440 mcg twice daily was evaluated
218 over 12 weeks of treatment in 415 patients with asthma who were already receiving an inhaled
219 corticosteroid at a daily dose within its recommended dose range in addition to as-needed
220 albuterol. Baseline FEV₁ values were similar across groups (mean 65% to 66% of predicted
221 normal). All 3 dosages of FLOVENT HFA significantly improved asthma control (as measured
222 by improvement in FEV₁), compared with placebo. Discontinuations from the study for lack of
223 efficacy (defined by a pre-specified decrease in FEV₁ or PEF, or an increase in use of
224 VENTOLIN or nighttime awakenings requiring treatment with VENTOLIN) were lower in the
225 groups treated with FLOVENT HFA (6% to 11%) compared to placebo (50%). Pulmonary
226 function (AM pre-dose FEV₁) improved significantly with FLOVENT HFA compared with
227 placebo after the first week of treatment, and the improvement was maintained over the 12-week
228 treatment period.

229 At Endpoint (last observation), mean change from baseline in AM pre-dose percent predicted
230 FEV₁ was greater in all 3 groups treated with FLOVENT HFA (2.2% to 4.6%) compared with
231 the placebo group (-8.3%). The mean differences between the groups treated with
232 FLOVENT HFA 88, 220, and 440 mcg and the placebo group were significant, and the
233 corresponding 95% confidence intervals were (7.1%, 13.8%), (8.2%, 14.9%), and (9.6%,
234 16.4%), respectively.

235 Figure 2 displays the mean percent change from baseline in FEV₁ from Week 1 through Week
236 12. This study used predetermined criteria for lack of efficacy, resulting in withdrawal of more
237 patients in the placebo group; therefore, pulmonary function results at Endpoint are displayed.
238

239 **Figure 2. A 12-Week Clinical Trial With Patients Already Receiving Daily**
 240 **Inhaled Corticosteroids: Mean Percent Change From Baseline in FEV₁ Prior**
 241 **to AM Dose (Study 2)**
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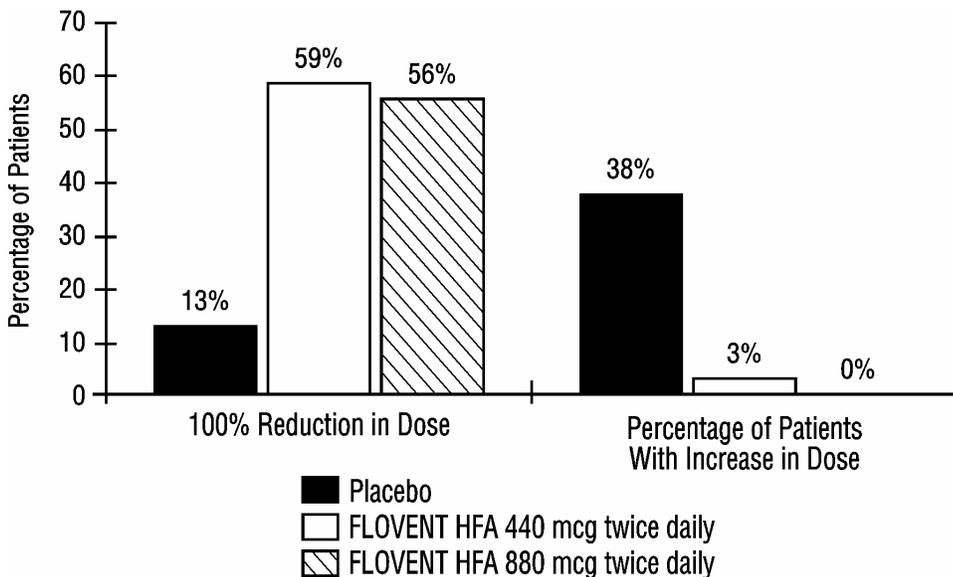


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245 In both studies, use of VENTOLIN, AM and PM PEF, and asthma symptom scores showed
 246 numerical improvement with FLOVENT HFA compared to placebo.

247 Study 3 enrolled 168 patients with asthma requiring oral prednisone therapy (average baseline
 248 daily prednisone dose ranged from 13 to 14 mg). FLOVENT HFA at dosages of 440 and
 249 880 mcg twice daily was evaluated over a 16-week treatment period. Baseline FEV₁ values were
 250 similar across groups (mean 59% to 62% of predicted normal). Over the course of the study,
 251 patients treated with either dosage of FLOVENT HFA required a significantly lower mean daily
 252 oral prednisone dose (6 mg) compared with placebo-treated patients (15 mg). Both dosages of
 253 FLOVENT HFA enabled a larger percentage of patients (59% and 56% in the groups treated
 254 with FLOVENT HFA 440 and 880 mcg, respectively, twice daily) to eliminate oral prednisone
 255 as compared with placebo (13%) (see Figure 3). There was no efficacy advantage of FLOVENT
 256 HFA 880 mcg twice daily compared to 440 mcg twice daily. Accompanying the reduction in oral
 257 corticosteroid use, patients treated with either dosage of FLOVENT HFA had significantly
 258 improved lung function, fewer asthma symptoms, and less use of VENTOLIN Inhalation
 259 Aerosol compared with the placebo-treated patients.
 260

261 **Figure 3. A 16-Week Clinical Trial in Patients Requiring Chronic Oral**
 262 **Prednisone Therapy: Change in Maintenance Prednisone Dose**
 263



264
 265
 266 Two long-term safety studies (Study 4 and Study 5) of ≥ 6 months duration were conducted in
 267 507 adolescent and adult patients with asthma. Study 4 was designed to monitor the safety of
 268 2 doses of FLOVENT HFA, while Study 5 compared HFA 134a-propelled and CFC
 269 11/12-propelled fluticasone propionate. Study 4 enrolled 182 patients who were treated daily
 270 with low to high doses of inhaled corticosteroids, beta-agonists (short-acting [as needed or
 271 regularly scheduled] or long-acting), theophylline, inhaled cromolyn or nedocromil sodium,
 272 leukotriene receptor antagonists, or 5-lipoxygenase inhibitors at baseline. FLOVENT HFA at
 273 dosages of 220 and 440 mcg twice daily was evaluated over a 26-week treatment period in 89
 274 and 93 patients, respectively. Study 5 enrolled 325 patients who were treated daily with moderate
 275 to high doses of inhaled corticosteroids, with or without concurrent use of salmeterol or
 276 albuterol, at baseline. HFA 134a-propelled fluticasone propionate at a dosage of 440 mcg twice
 277 daily and CFC 11/12-propelled fluticasone propionate at a dosage of 440 mcg twice daily were
 278 evaluated over a 52-week treatment period in 163 and 162 patients, respectively. Baseline FEV₁
 279 values were similar across groups (mean 81% to 84% of predicted normal). Throughout the
 280 52-week treatment period, asthma control was maintained with both formulations of fluticasone
 281 propionate compared to baseline. In both studies, none of the patients were withdrawn due to
 282 lack of efficacy.

283 **INDICATIONS AND USAGE**

284 FLOVENT HFA Inhalation Aerosol is indicated for the maintenance treatment of asthma as
285 prophylactic therapy in adolescent and adult patients 12 years of age and older. It is also
286 indicated for patients requiring oral corticosteroid therapy for asthma. Many of these patients
287 may be able to reduce or eliminate their requirement for oral corticosteroids over time.

288 FLOVENT HFA Inhalation Aerosol is NOT indicated for the relief of acute bronchospasm.

289 **CONTRAINDICATIONS**

290 FLOVENT HFA Inhalation Aerosol is contraindicated in the primary treatment of status
291 asthmaticus or other acute episodes of asthma where intensive measures are required.

292 Hypersensitivity to any of the ingredients (see DESCRIPTION) of these preparations
293 contraindicates their use.

294 **WARNINGS**

295 Particular care is needed for patients who are transferred from systemically active
296 corticosteroids to FLOVENT HFA because deaths due to adrenal insufficiency have occurred in
297 patients with asthma during and after transfer from systemic corticosteroids to less systemically
298 available inhaled corticosteroids. After withdrawal from systemic corticosteroids, a number of
299 months are required for recovery of HPA function.

300 Patients who have been previously maintained on 20 mg or more per day of prednisone (or its
301 equivalent) may be most susceptible, particularly when their systemic corticosteroids have been
302 almost completely withdrawn. During this period of HPA suppression, patients may exhibit signs
303 and symptoms of adrenal insufficiency when exposed to trauma, surgery, or infection
304 (particularly gastroenteritis) or other conditions associated with severe electrolyte loss. Although
305 FLOVENT HFA may provide control of asthma symptoms during these episodes, in
306 recommended doses it supplies less than normal physiological amounts of glucocorticoid
307 systemically and does NOT provide the mineralocorticoid activity that is necessary for coping
308 with these emergencies.

309 During periods of stress or a severe asthma attack, patients who have been withdrawn from
310 systemic corticosteroids should be instructed to resume oral corticosteroids (in large doses)
311 immediately and to contact their physicians for further instruction. These patients should also be
312 instructed to carry a warning card indicating that they may need supplementary systemic
313 corticosteroids during periods of stress or a severe asthma attack.

314 A drug interaction study in healthy subjects has shown that ritonavir (a highly potent
315 cytochrome P450 3A4 inhibitor) can significantly increase plasma fluticasone propionate
316 exposure, resulting in significantly reduced serum cortisol concentrations (see CLINICAL
317 PHARMACOLOGY: Pharmacokinetics: *Drug Interactions* and PRECAUTIONS: Drug
318 Interactions: *Inhibitors of Cytochrome P450*). During postmarketing use, there have been reports
319 of clinically significant drug interactions in patients receiving fluticasone propionate and
320 ritonavir, resulting in systemic corticosteroid effects including Cushing syndrome and adrenal
321 suppression. Therefore, coadministration of fluticasone propionate and ritonavir is not

322 recommended unless the potential benefit to the patient outweighs the risk of systemic
323 corticosteroid side effects.

324 Patients requiring oral corticosteroids should be weaned slowly from systemic corticosteroid
325 use after transferring to FLOVENT HFA. In a clinical trial of 168 patients, prednisone reduction
326 was successfully accomplished by reducing the daily prednisone dose on a weekly basis
327 following initiation of treatment with FLOVENT HFA. Successive reduction of prednisone dose
328 was allowed only when lung function; symptoms; and as-needed, short-acting beta-agonist use
329 were better than or comparable to that seen before initiation of prednisone dose reduction. Lung
330 function (FEV₁ or AM PEF), beta-agonist use, and asthma symptoms should be carefully
331 monitored during withdrawal of oral corticosteroids. In addition to monitoring asthma signs and
332 symptoms, patients should be observed for signs and symptoms of adrenal insufficiency such as
333 fatigue, lassitude, weakness, nausea and vomiting, and hypotension.

334 Transfer of patients from systemic corticosteroid therapy to FLOVENT HFA may unmask
335 conditions previously suppressed by the systemic corticosteroid therapy, e.g., rhinitis,
336 conjunctivitis, eczema, arthritis, and eosinophilic conditions.

337 Persons who are using drugs that suppress the immune system are more susceptible to
338 infections than healthy individuals. Chickenpox and measles, for example, can have a more
339 serious or even fatal course in susceptible children or adults using corticosteroids. In such
340 children or adults who have not had these diseases or been properly immunized, particular care
341 should be taken to avoid exposure. How the dose, route, and duration of corticosteroid
342 administration affect the risk of developing a disseminated infection is not known. The
343 contribution of the underlying disease and/or prior corticosteroid treatment to the risk is also not
344 known. If exposed to chickenpox, prophylaxis with varicella zoster immune globulin (VZIG)
345 may be indicated. If exposed to measles, prophylaxis with pooled intramuscular immunoglobulin
346 (IG) may be indicated. (See the respective package inserts for complete VZIG and IG prescribing
347 information.) If chickenpox develops, treatment with antiviral agents may be considered.

348 FLOVENT HFA is not to be regarded as a bronchodilator and is not indicated for rapid relief
349 of bronchospasm.

350 As with other inhaled medications, bronchospasm may occur with an immediate increase in
351 wheezing after dosing. If bronchospasm occurs following dosing with FLOVENT HFA, it should
352 be treated immediately with a fast-acting inhaled bronchodilator. Treatment with
353 FLOVENT HFA should be discontinued and alternative therapy instituted.

354 Patients should be instructed to contact their physicians immediately when episodes of asthma
355 that are not responsive to bronchodilators occur during the course of treatment with
356 FLOVENT HFA. During such episodes, patients may require therapy with oral corticosteroids.

357 **PRECAUTIONS**

358 **General:** Orally inhaled corticosteroids may cause a reduction in growth velocity when
359 administered to pediatric patients (see PRECAUTIONS: Pediatric Use).

360 During withdrawal from systemically active corticosteroids, some patients may experience
361 symptoms of corticosteroid withdrawal, e.g., joint and/or muscular pain, lassitude, and
362 depression, despite maintenance or even improvement of respiratory function.

363 Fluticasone propionate will often permit control of asthma symptoms with less suppression of
364 HPA function than therapeutically equivalent oral doses of prednisone. Since fluticasone
365 propionate is absorbed into the circulation and can be systemically active at higher doses, the
366 beneficial effects of FLOVENT HFA in minimizing HPA dysfunction may be expected only
367 when recommended dosages are not exceeded and individual patients are titrated to the lowest
368 effective dose. A relationship between plasma levels of fluticasone propionate and inhibitory
369 effects on stimulated cortisol production has been shown after 4 weeks of treatment with
370 fluticasone propionate. Since individual sensitivity to effects on cortisol production exists,
371 physicians should consider this information when prescribing FLOVENT HFA.

372 Because of the possibility of systemic absorption of inhaled corticosteroids, patients treated
373 with FLOVENT HFA should be observed carefully for any evidence of systemic corticosteroid
374 effects. Particular care should be taken in observing patients postoperatively or during periods of
375 stress for evidence of inadequate adrenal response.

376 It is possible that systemic corticosteroid effects such as hypercorticism and adrenal
377 suppression (including adrenal crisis) may appear in a small number of patients, particularly
378 when FLOVENT HFA is administered at higher than recommended doses over prolonged
379 periods of time. If such effects occur, the dosage of FLOVENT HFA should be reduced slowly,
380 consistent with accepted procedures for reducing systemic corticosteroids and for management
381 of asthma.

382 The long-term effects of fluticasone propionate in human subjects are not fully known. In
383 particular, the effects resulting from chronic use of fluticasone propionate on developmental or
384 immunologic processes in the mouth, pharynx, trachea, and lung are unknown. Some patients
385 have received inhaled fluticasone propionate on a continuous basis for periods of 3 years or
386 longer. In clinical studies with patients treated for 2 years with inhaled fluticasone propionate, no
387 apparent differences in the type or severity of adverse reactions were observed after long- versus
388 short-term treatment.

389 Rare instances of glaucoma, increased intraocular pressure, and cataracts have been reported
390 in patients following the long-term administration of inhaled corticosteroids, including
391 fluticasone propionate.

392 In clinical studies with inhaled fluticasone propionate, the development of localized infections
393 of the pharynx with *Candida albicans* has occurred. When such an infection develops, it should
394 be treated with appropriate local or systemic (i.e., oral antifungal) therapy while remaining on
395 treatment with FLOVENT HFA, but at times therapy with FLOVENT HFA may need to be
396 interrupted.

397 Inhaled corticosteroids should be used with caution, if at all, in patients with active or
398 quiescent tuberculosis infection of the respiratory tract; untreated systemic fungal, bacterial, viral
399 or parasitic infections; or ocular herpes simplex.

400 **Eosinophilic Conditions:** In rare cases, patients on inhaled fluticasone propionate may
401 present with systemic eosinophilic conditions, with some patients presenting with clinical
402 features of vasculitis consistent with Churg-Strauss syndrome, a condition that is often treated
403 with systemic corticosteroid therapy. These events usually, but not always, have been associated
404 with the reduction and/or withdrawal of oral corticosteroid therapy following the introduction of
405 fluticasone propionate. Cases of serious eosinophilic conditions have also been reported with
406 other inhaled corticosteroids in this clinical setting. Physicians should be alert to eosinophilia,
407 vasculitic rash, worsening pulmonary symptoms, cardiac complications, and/or neuropathy
408 presenting in their patients. A causal relationship between fluticasone propionate and these
409 underlying conditions has not been established (see ADVERSE REACTIONS: Observed During
410 Clinical Practice: *Eosinophilic Conditions*).

411 **Information for Patients:** Patients being treated with FLOVENT HFA should receive the
412 following information and instructions. This information is intended to aid them in the safe and
413 effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

414 It is important that patients understand how to use FLOVENT HFA in relation to other asthma
415 medications they are taking. Patients should be given the following information:

- 416 1. Patients should use FLOVENT HFA at regular intervals as directed. Individual patients will
417 experience a variable time to onset and degree of symptom relief and the full benefit may not
418 be achieved until treatment has been administered for 1 to 2 weeks or longer. The patient
419 should not increase the prescribed dosage but should contact the physician if symptoms do not
420 improve or if the condition worsens.
- 421 2. Patients who are pregnant or nursing should contact their physicians about the use of
422 FLOVENT HFA.
- 423 3. Patients should be warned to avoid exposure to chickenpox or measles and if they are exposed
424 physicians without delay.
- 425 4. ~~It is recommended to p~~Prime the inhaler before using for the first time by releasing 4 test
426 sprays into the air away from the face, shaking well before each spray. In cases where the
427 inhaler has not been used for more than 7 days or when it has been dropped, prime the inhaler
428 again by shaking well and releasing 1 test spray into the air away from the face.
- 429 5. After inhalation, rinse the mouth with water and spit out. Do not swallow.
- 430 6. Clean the inhaler at least once a week after the evening dose. Keeping the canister and plastic
431 actuator clean is important to prevent medicine build-up. (See Patient's Instructions for Use
432 leaflet accompanying the product.)
- 433 7. Use FLOVENT HFA only with the actuator supplied with the product. Discard the inhaler
434 after the labeled number of inhalations have been used.
- 435 8. For the proper use of FLOVENT HFA and to attain maximum improvement, the patient
436 should read and carefully follow the Patient's Instructions for Use leaflet accompanying the
437 product.

438 **Drug Interactions: *Inhibitors of Cytochrome P450:*** Fluticasone propionate is a substrate
439 of cytochrome P450 3A4. A drug interaction study with fluticasone propionate aqueous nasal

440 spray in healthy subjects has shown that ritonavir (a highly potent cytochrome P450 3A4
441 inhibitor) can significantly increase plasma fluticasone propionate exposure, resulting in
442 significantly reduced serum cortisol concentrations (see CLINICAL PHARMACOLOGY:
443 Pharmacokinetics: *Drug Interactions*). During postmarketing use, there have been reports of
444 clinically significant drug interactions in patients receiving fluticasone propionate and ritonavir,
445 resulting in systemic corticosteroid effects including Cushing syndrome and adrenal suppression.
446 Therefore, coadministration of fluticasone propionate and ritonavir is not recommended unless
447 the potential benefit to the patient outweighs the risk of systemic corticosteroid side effects.

448 In a placebo-controlled crossover study in 8 healthy volunteers, coadministration of a single
449 dose of orally inhaled fluticasone propionate (1,000 mcg) with multiple doses of ketoconazole
450 (200 mg) to steady state resulted in increased plasma fluticasone propionate exposure, a
451 reduction in plasma cortisol AUC, and no effect on urinary excretion of cortisol. Caution should
452 be exercised when FLOVENT HFA is coadministered with ketoconazole and other known
453 potent cytochrome P450 3A4 inhibitors.

454 **Carcinogenesis, Mutagenesis, Impairment of Fertility:** Fluticasone propionate
455 demonstrated no tumorigenic potential in mice at oral doses up to 1,000 mcg/kg (approximately
456 2 times the maximum recommended daily inhalation dose on a mcg/m² basis) for 78 weeks or in
457 rats at inhalation doses up to 57 mcg/kg (less than the maximum recommended daily inhalation
458 dose on a mcg/m² basis) for 104 weeks.

459 Fluticasone propionate did not induce gene mutation in prokaryotic or eukaryotic cells in
460 vitro. No significant clastogenic effect was seen in cultured human peripheral lymphocytes in
461 vitro or in the mouse micronucleus test.

462 No evidence of impairment of fertility was observed in reproductive studies conducted in
463 male and female rats at subcutaneous doses up to 50 mcg/kg (less than the maximum
464 recommended daily inhalation dose in adults on a mcg/m² basis). Prostate weight was
465 significantly reduced in rats at a subcutaneous dose of 50 mcg/kg.

466 **Pregnancy: Teratogenic Effects:** Pregnancy Category C. Subcutaneous studies in the
467 mouse and rat at 45 and 100 mcg/kg, respectively (less than the maximum recommended daily
468 inhalation dose in adults on a mcg/m² basis), revealed fetal toxicity characteristic of potent
469 corticosteroid compounds, including embryonic growth retardation, omphalocele, cleft palate,
470 and retarded cranial ossification. No teratogenicity was seen in the rat at inhalation doses up to
471 68.7 mcg/kg (less than the maximum recommended daily inhalation dose in adults on a mcg/m²
472 basis).

473 In the rabbit, fetal weight reduction and cleft palate were observed at a subcutaneous dose of
474 4 mcg/kg (less than the maximum recommended daily inhalation dose in adults on a mcg/m²
475 basis). However, no teratogenic effects were reported at oral doses up to 300 mcg/kg
476 (approximately 3 times the maximum recommended daily inhalation dose in adults on a mcg/m²
477 basis) of fluticasone propionate. No fluticasone propionate was detected in the plasma in this
478 study, consistent with the established low bioavailability following oral administration (see
479 CLINICAL PHARMACOLOGY: Pharmacokinetics: *Absorption*).

480 Fluticasone propionate crossed the placenta following administration of a subcutaneous dose
481 of 100 mcg/kg to mice (less than the maximum recommended daily inhalation dose in adults on a
482 mcg/m² basis), a subcutaneous or an oral dose of 100 mcg/kg to rats (less than the maximum
483 recommended daily inhalation dose in adults on a mcg/m² basis), and an oral dose of 300 mcg/kg
484 to rabbits (approximately 3 times the maximum recommended daily inhalation dose in adults on
485 a mcg/m² basis).

486 There are no adequate and well-controlled studies in pregnant women. FLOVENT HFA
487 should be used during pregnancy only if the potential benefit justifies the potential risk to the
488 fetus.

489 Experience with oral corticosteroids since their introduction in pharmacologic, as opposed to
490 physiologic, doses suggests that rodents are more prone to teratogenic effects from
491 corticosteroids than humans. In addition, because there is a natural increase in corticosteroid
492 production during pregnancy, most women will require a lower exogenous corticosteroid dose
493 and many will not need corticosteroid treatment during pregnancy.

494 **Nursing Mothers:** It is not known whether fluticasone propionate is excreted in human breast
495 milk. However, other corticosteroids have been detected in human milk. Subcutaneous
496 administration to lactating rats of 10 mcg/kg of tritiated fluticasone propionate (less than the
497 maximum recommended daily inhalation dose in adults on a mcg/m² basis) resulted in
498 measurable radioactivity in milk.

499 Since there are no data from controlled trials on the use of FLOVENT HFA by nursing
500 mothers, a decision should be made whether to discontinue nursing or to discontinue
501 FLOVENT HFA, taking into account the importance of FLOVENT HFA to the mother.

502 Caution should be exercised when FLOVENT HFA is administered to a nursing woman.

503 **Pediatric Use:** Orally inhaled corticosteroids may cause a reduction in growth velocity when
504 administered to pediatric patients. A reduction of growth velocity in children or teenagers may
505 occur as a result of poorly controlled asthma or from use of corticosteroids including inhaled
506 corticosteroids. The effects of long-term treatment of children and adolescents with inhaled
507 corticosteroids, including fluticasone propionate, on final adult height are not known.

508 Controlled clinical studies have shown that inhaled corticosteroids may cause a reduction in
509 growth in pediatric patients. In these studies, the mean reduction in growth velocity was
510 approximately 1 cm/year (range, 0.3 to 1.8 cm/year) and appears to depend upon dose and
511 duration of exposure. This effect was observed in the absence of laboratory evidence of
512 hypothalamic-pituitary-adrenal (HPA) axis suppression, suggesting that growth velocity is a
513 more sensitive indicator of systemic corticosteroid exposure in pediatric patients than some
514 commonly used tests of HPA axis function. The long-term effects of this reduction in growth
515 velocity associated with orally inhaled corticosteroids, including the impact on final adult height,
516 are unknown. The potential for “catch-up” growth following discontinuation of treatment with
517 orally inhaled corticosteroids has not been adequately studied. The effects on growth velocity of
518 treatment with orally inhaled corticosteroids for over 1 year, including the impact on final adult
519 height, are unknown. The growth of children and adolescents receiving orally inhaled

520 corticosteroids, including FLOVENT HFA, should be monitored routinely (e.g., via
521 stadiometry). The potential growth effects of prolonged treatment should be weighed against the
522 clinical benefits obtained and the risks associated with alternative therapies. To minimize the
523 systemic effects of orally inhaled corticosteroids, including FLOVENT HFA, each patient should
524 be titrated to the lowest dose that effectively controls his/her symptoms.

525 Since a cross study comparison in adolescent and adult patients (≥ 12 years of age) indicated
526 that systemic exposure of inhaled fluticasone propionate from FLOVENT HFA would be higher
527 than exposure from FLOVENT[®] ROTADISK[®], results from a study to assess the potential
528 growth effects of FLOVENT[®] ROTADISK[®] in pediatric patients (4-11 years of age) are
529 provided.

530 A 52-week, placebo-controlled study to assess the potential growth effects of fluticasone
531 propionate inhalation powder (FLOVENT[®] ROTADISK[®]) at 50 and 100 mcg twice daily was
532 conducted in the US in 325 prepubescent children (244 males and 81 females) aged 4 to
533 11 years. The mean growth velocities at 52 weeks observed in the intent-to-treat population were
534 6.32 cm/year in the placebo group (N = 76), 6.07 cm/year in the 50-mcg group (N = 98), and
535 5.66 cm/year in the 100-mcg group (N = 89). An imbalance in the proportion of children entering
536 puberty between groups and a higher dropout rate in the placebo group due to poorly controlled
537 asthma may be confounding factors in interpreting these data. A separate subset analysis of
538 children who remained prepubertal during the study revealed growth rates at 52 weeks of
539 6.10 cm/year in the placebo group (n = 57), 5.91 cm/year in the 50-mcg group (n = 74), and
540 5.67 cm/year in the 100-mcg group (n = 79). In children 8.5 years of age, the mean age of
541 children in this study, the range for expected growth velocity is: boys – 3rd
542 percentile = 3.8 cm/year, 50th percentile = 5.4 cm/year, and 97th percentile = 7.0 cm/year; girls –
543 3rd percentile = 4.2 cm/year, 50th percentile = 5.7 cm/year, and 97th percentile = 7.3 cm/year.

544 The clinical significance of these growth data is not certain. Physicians should closely follow
545 the growth of children and adolescents taking corticosteroids by any route, and weigh the
546 benefits of corticosteroid therapy against the possibility of growth suppression if growth appears
547 slowed. Patients should be maintained on the lowest dose of inhaled corticosteroid that
548 effectively controls their asthma.

549 The safety and effectiveness of FLOVENT HFA in children below 12 years of age have not
550 been established.

551 A total of 73 patients between the ages of 12 to 17 years of age were studied in the US pivotal
552 clinical trials. Improved asthma control (as measured by an improvement in FEV₁) was greater
553 for patients treated with FLOVENT HFA compared to those treated with placebo.

554 **Geriatric Use:** Of the total number of patients treated with FLOVENT HFA in US and non-US
555 clinical trials, 173 were 65 years of age or older, 19 of which were 75 years of age or older. No
556 apparent differences in safety or efficacy were observed between these patients and younger
557 patients. No overall differences in safety were observed between these patients and younger
558 patients, and other reported clinical experience has not identified differences in responses
559 between the elderly and younger patients, but greater sensitivity of some older individuals cannot

560 be ruled out. In general, dose selection for an elderly patient should be cautious, reflecting the
 561 greater frequency of decreased hepatic function and of concomitant disease or other drug
 562 therapy.

563 **ADVERSE REACTIONS**

564 The incidence of common adverse events in Table 1 is based upon 2 placebo-controlled US
 565 clinical trials in which 812 adolescent and adult patients (457 females and 355 males) previously
 566 treated with as-needed bronchodilators and/or inhaled corticosteroids were treated with
 567 FLOVENT HFA (dosages of 88, 220, or 440 mcg twice daily for up to 12 weeks) or placebo.
 568

569 **Table 1. Overall Adverse Events With >3% Incidence in US Controlled Clinical Trials**
 570 **With FLOVENT HFA in Patients With Asthma Previously Receiving Bronchodilators**
 571 **and/or Inhaled Corticosteroids**

Adverse Event	FLOVENT HFA 44 mcg (N = 203) %	FLOVENT HFA 110 mcg (N = 204) %	FLOVENT HFA 220 mcg (N = 202) %	Placebo (N = 203) %
Ear, nose, and throat				
Upper respiratory tract infection	18	16	16	14
Throat irritation	8	8	10	5
Upper respiratory inflammation	2	5	5	1
Sinusitis/sinus infection	6	7	4	3
Hoarseness/dysphonia	2	3	6	<1
Gastrointestinal				
Candidiasis mouth/throat & non-site specific	4	2	5	<1
Lower respiratory				
Cough	4	6	4	5
Bronchitis	2	2	6	5
Neurological				
Headache	11	7	5	6
Average duration of exposure (days)	73	74	76	60

572
 573 Table 2 includes all events (whether considered drug-related or nondrug-related by the
 574 investigator) that occurred at a rate of over 3% in any of the groups treated with FLOVENT HFA
 575 and were more common than in the placebo group. In considering these data, differences in
 576 average duration of exposure should be taken into account.

577 These adverse events were mostly mild to moderate in severity. Rare cases of immediate and
 578 delayed hypersensitivity reactions, including urticaria and rash, have been reported.

579 Other adverse events that occurred in the groups receiving FLOVENT HFA in these studies
580 with an incidence of 1% to 3% and that occurred at a greater incidence than with placebo were:

581 **Ear, Nose, and Throat:** Sinusitis/sinus infection, rhinitis, pharyngitis/throat infection,
582 rhinorrhea/post-nasal drip, nasal sinus disorders, laryngitis.

583 **Gastrointestinal:** Diarrhea, viral gastrointestinal infections, gastrointestinal signs and
584 symptoms, dyspeptic symptoms, gastrointestinal discomfort and pain, hyposalivation.

585 **Musculoskeletal:** Musculoskeletal pain, muscle pain, muscle stiffness/tightness/rigidity.

586 **Neurological:** Dizziness, migraines.

587 **Non-Site Specific:** Fever, viral infections, pain, chest symptoms.

588 **Skin:** Viral skin infections.

589 **Trauma:** Muscle injuries, soft tissue injuries, injuries.

590 **Urogenital:** Urinary infections.

591 Fluticasone propionate inhalation aerosol (440 or 880 mcg twice daily) was administered for
592 16 weeks to patients with asthma requiring oral corticosteroids (Study 3). Adverse events not
593 included in Table 2, but reported by >3 patients in either group treated with FLOVENT HFA and
594 more commonly than in the placebo group included rhinitis, nausea and vomiting, arthralgia and
595 articular rheumatism, musculoskeletal pain, muscle pain, malaise and fatigue, and sleep
596 disorders.

597 In 2 long-term studies (26 and 52 weeks), treatment with FLOVENT HFA at dosages up to
598 440 mcg twice daily was well tolerated. The pattern of adverse events was similar to that
599 observed in the 12-week studies. There were no new and/or unexpected adverse events with
600 long-term treatment.

601 **Observed During Clinical Practice:** In addition to adverse events reported from clinical
602 trials, the following events have been identified during postapproval use of fluticasone
603 propionate. Because they are reported voluntarily from a population of unknown size, estimates
604 of frequency cannot be made. These events have been chosen for inclusion due to either their
605 seriousness, frequency of reporting, or causal connection to fluticasone propionate or a
606 combination of these factors.

607 **Ear, Nose, and Throat:** Aphonia, facial and oropharyngeal edema, including angioedema,
608 and throat soreness and irritation.

609 **Endocrine and Metabolic:** Cushingoid features, growth velocity reduction in
610 children/adolescents, hyperglycemia, osteoporosis, and weight gain.

611 **Eye:** Cataracts.

612 **Non-Site Specific:** Very rare anaphylactic reaction.

613 **Psychiatry:** Agitation, aggression, depression, and restlessness.

614 **Respiratory:** Asthma exacerbation, chest tightness, cough, dyspnea, immediate and delayed
615 bronchospasm, paradoxical bronchospasm, pneumonia, and wheeze.

616 **Skin:** Contusions, cutaneous hypersensitivity reactions, ecchymoses, and pruritus.

617 **Eosinophilic Conditions:** In rare cases, patients on inhaled fluticasone propionate may
618 present with systemic eosinophilic conditions, with some patients presenting with clinical

619 features of vasculitis consistent with Churg-Strauss syndrome, a condition that is often treated
620 with systemic corticosteroid therapy. These events usually, but not always, have been associated
621 with the reduction and/or withdrawal of oral corticosteroid therapy following the introduction of
622 fluticasone propionate. Cases of serious eosinophilic conditions have also been reported with
623 other inhaled corticosteroids in this clinical setting. Physicians should be alert to eosinophilia,
624 vasculitic rash, worsening pulmonary symptoms, cardiac complications, and/or neuropathy
625 presenting in their patients. A causal relationship between fluticasone propionate and these
626 underlying conditions has not been established (see PRECAUTIONS: Eosinophilic Conditions).

627 **OVERDOSAGE**

628 Chronic overdosage may result in signs/symptoms of hypercorticism (see PRECAUTIONS:
629 General). Inhalation by healthy volunteers of a single dose of 1,760 or 3,520 mcg of CFC
630 11/12-propelled fluticasone propionate inhalation aerosol was well tolerated. Doses of 1,320 mcg
631 administered to healthy human volunteers twice daily for 7 to 15 days were also well tolerated.
632 Repeat oral doses up to 80 mg daily for 10 days in healthy volunteers and repeat oral doses up to
633 20 mg daily for 42 days in patients were well tolerated. Adverse reactions were of mild or
634 moderate severity, and incidences were similar in active and placebo treatment groups. The oral
635 and subcutaneous median lethal doses in rats and mice were >1,000 mg/kg (approximately 4,600
636 and 2,300 times the maximum human daily inhalation dose based on mg/m², respectively).

637 **DOSAGE AND ADMINISTRATION**

638 FLOVENT HFA should be administered by the orally inhaled route only in patients 12 years
639 of age and older. Individual patients will experience a variable time to onset and degree of
640 symptom relief. Maximum benefit may not be achieved for 1 to 2 weeks or longer after starting
641 treatment.

642 After asthma stability has been achieved, it is always desirable to titrate to the lowest effective
643 dosage to reduce the possibility of side effects. For patients who do not respond adequately to the
644 starting dosage after 2 weeks of therapy, higher dosages may provide additional asthma control.
645 The safety and efficacy of FLOVENT HFA when administered in excess of recommended
646 dosages have not been established.

647 The recommended starting dosage and the highest recommended dosage of FLOVENT HFA,
648 based on prior asthma therapy, are listed in Table 2.

649

650 **Table 2. Recommended Dosages of FLOVENT HFA**

651 **NOTE: In all patients, it is desirable to titrate to the lowest effective dosage once asthma**
652 **stability is achieved.**

Previous Therapy	Recommended Starting Dosage	Highest Recommended Dosage
Bronchodilators alone	88 mcg twice daily	440 mcg twice daily
Inhaled corticosteroids	88-220 mcg twice daily*	440 mcg twice daily
Oral corticosteroids†	440 mcg twice daily	880 mcg twice daily

* Starting dosages above 88 mcg twice daily may be considered for patients with poorer asthma control or those who have previously required doses of inhaled corticosteroids that are in the higher range for that specific agent.

† **For Patients Currently Receiving Chronic Oral Corticosteroid Therapy:** Prednisone should be reduced no faster than 2.5 to 5 mg/day on a weekly basis, beginning after at least 1 week of therapy with FLOVENT HFA. Patients should be carefully monitored for signs of asthma instability, including serial objective measures of airflow, and for signs of adrenal insufficiency (see WARNINGS). Once prednisone reduction is complete, the dosage of fluticasone propionate HFA should be reduced to the lowest effective dosage.

653
654 ~~It is recommended to prime the inhaler~~ **FLOVENT HFA should be primed** before using for the
655 first time by releasing 4 test sprays into the air away from the face, shaking well before each
656 spray. In cases where the inhaler has not been used for more than 7 days or when it has been
657 dropped, prime the inhaler again by shaking well and releasing 1 test spray into the air away from
658 the face.

659 **Geriatric Use:** In studies where geriatric patients (65 years of age or older, see
660 PRECAUTIONS: Geriatric Use) have been treated with fluticasone propionate inhalation
661 aerosol, efficacy and safety did not differ from that in younger patients. Based on available data
662 for FLOVENT HFA, no dosage adjustment is recommended.

663 **Directions for Use:** Illustrated Patient's Instructions for Use accompany each package of
664 FLOVENT HFA.

665 **HOW SUPPLIED**

666 FLOVENT HFA 44 mcg Inhalation Aerosol is supplied in 10.6-g pressurized aluminum
667 canisters containing 120 metered inhalations in boxes of 1 (NDC 0173-0718-00). Each canister is
668 supplied with a dark orange oral actuator with a peach strapcap packaged within a plastic-coated,
669 moisture-protective foil pouch and patient's instructions. The moisture-protective foil pouch also
670 contains a desiccant that should be discarded when the pouch is opened.

671 FLOVENT HFA 110 mcg Inhalation Aerosol is supplied in 12-g pressurized aluminum
672 canisters containing 120 metered inhalations in boxes of 1 (NDC 0173-0719-00). Each canister is
673 supplied with a dark orange oral actuator with a peach strapcap packaged within a plastic-coated,
674 moisture-protective foil pouch and patient's instructions. The moisture-protective foil pouch also
675 contains a desiccant that should be discarded when the pouch is opened.

676 FLOVENT HFA 220 mcg Inhalation Aerosol is supplied in 12-g pressurized aluminum
677 canisters containing 120 metered inhalations in boxes of 1 (NDC 0173-0720-00). Each canister is
678 supplied with a dark orange oral actuator with a peach strapcap packaged within a plastic-coated,
679 moisture-protective foil pouch and patient’s instructions. The moisture-protective foil pouch also
680 contains a desiccant that should be discarded when the pouch is opened.

681 **The dark orange actuator supplied with FLOVENT HFA should not be used with any**
682 **other product canisters, and actuators from other products should not be used with a**
683 **FLOVENT HFA canister.**

684 **The correct amount of medication in each inhalation cannot be assured after**
685 **120 inhalations, even though the canister is not completely empty and will continue to**
686 **operate. The inhaler should be discarded when 120 actuations have been used. Never**
687 **immerse the canister into water to determine the amount remaining in the canister (“float**
688 **test”).**

689 **Keep out of reach of children. Avoid spraying in eyes.**

690 **Contents Under Pressure: Do not puncture. Do not use or store near heat or open flame.**
691 **Exposure to temperatures above 120°F may cause bursting. Never throw into fire or**
692 **incinerator.**

693 **Store at 25°C (77°F); excursions permitted to 15°-30°C (59°-86°F). Store the inhaler**
694 **with the mouthpiece down. For best results, the inhaler should be at room temperature**
695 **before use. SHAKE WELL BEFORE USING.**

696 FLOVENT HFA does not contain chlorofluorocarbons (CFCs) as the propellant.
697
698



699 GlaxoSmithKline
700 GlaxoSmithKline
701 Research Triangle Park, NC 27709
702

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704

705 Month Year (RL no.)

1 **Patient's Instructions for Use**

2
3 (illustration of 3 products)

4
5 **FLOVENT® HFA 44 mcg**
6 (fluticasone propionate **HFA**, 44 mcg)
7 **Inhalation Aerosol**

8
9 **FLOVENT® HFA 110 mcg**
10 (fluticasone propionate **HFA**, 110 mcg)
11 **Inhalation Aerosol**

12
13 **FLOVENT® HFA 220 mcg**
14 (fluticasone propionate **HFA**, 220 mcg)
15 **Inhalation Aerosol**

16
17 **FOR ORAL INHALATION ONLY.**

18
19 **Read this leaflet carefully before using your FLOVENT HFA Inhalation Aerosol.**

20 **What Is FLOVENT HFA Inhalation Aerosol?**

21 Your doctor has prescribed FLOVENT HFA 44 mcg, FLOVENT HFA 110 mcg, or
22 FLOVENT HFA 220 mcg Inhalation Aerosol. The medicine is available in 3 different
23 strengths, and your doctor has chosen the one most suitable for you.

24 FLOVENT HFA contains a medicine called fluticasone propionate, which is a synthetic
25 corticosteroid. Corticosteroids are natural substances found in the body that help fight
26 inflammation. [GSK comment: Sentence added for consistency with inhaled fluticasone
27 propionate PILs.] Corticosteroids are used to treat asthma because they reduce airway
28 inflammation.

29 When inhaled regularly, corticosteroids also help to prevent symptoms of asthma.

30 **Important Points to Remember About Using FLOVENT HFA Inhalation Aerosol**

- 31 1. FLOVENT HFA Inhalation Aerosol is not a bronchodilator and should not be used to
32 provide rapid relief of your breathing difficulties during an asthma attack. A short
33 acting bronchodilator, such as albuterol inhaler, should be used during an acute
34 asthma attack. FLOVENT HFA must be taken at regular intervals as recommended
35 by your doctor, and not as an emergency measure.
- 36 2. **TELL YOUR DOCTOR BEFORE YOU START TAKING THIS MEDICINE if**
37 **you are:**
38 • Pregnant or planning to become pregnant.

- 39 • breastfeeding a baby.
40 • allergic to FLOVENT HFA, ~~or any either~~ of its ingredients, or any other orally
41 inhaled corticosteroids.
42 • taking a medicine containing ritonavir (commonly used to treat HIV infection or
43 AIDS).

44 In some circumstances, this medicine may not be suitable for you and your doctor
45 may wish to give you a different medicine. Make sure that your doctor knows what
46 other medicines you are taking.

47 3. It is important that you inhale each dose as your doctor has advised. The prescription
48 label will usually tell you what dose to take and how often. If it doesn't, or if you are
49 not sure, ask your doctor or pharmacist. DO NOT inhale more doses or use your
50 FLOVENT HFA more often than your doctor advises.

51 4. It may take 1 to 2 weeks or longer for this medicine to work, and it is **VERY**
52 **IMPORTANT THAT YOU USE IT REGULARLY. DO NOT STOP**
53 **TREATMENT EVEN IF YOU ARE FEELING BETTER** unless told to do so by
54 your doctor.

55 5. If you miss a dose, just take your next scheduled dose when it is due. **DO NOT**
56 **DOUBLE** the dose.

57 6. Your doctor may prescribe additional medicine (such as bronchodilators) for
58 emergency relief if an acute asthma attack occurs. Contact your doctor if:
59 • an asthma attack does not respond to the additional medicine.
60 • you require more of the additional medicine than usual.

61 7. If you also use another medicine by inhalation, you should consult your doctor for
62 instructions on when to use it in relation to using FLOVENT HFA.

How to Use Your FLOVENT HFA Inhalation Aerosol

63 Before starting to use your FLOVENT HFA inhaler, remove it from the overwrap and
64 safely discard the overwrap and drying packet, which is also inside the overwrap. The
65 inhaler should be at room temperature before use.
66

67 Follow the instructions below. If you have any questions, ask your doctor or pharmacist.

68 **The dark orange actuator supplied with FLOVENT HFA should not be used with**
69 **any other product canisters, and actuators from other products should not be used**
70 **with a FLOVENT HFA canister.**

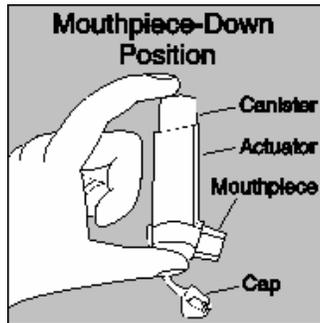
71 **SHAKE THE INHALER WELL** for 5 seconds immediately before each use.

72 **PRIME THE INHALER BEFORE USING IT FOR THE FIRST TIME** by releasing
73 4 test sprays into the air away from your face, shaking well for 5 seconds before each
74 spray. In cases where the inhaler has not been used for more than 7 days or when it has

75 been dropped, prime the inhaler again by shaking well for 5 seconds and releasing 1 test
76 spray into the air away from your face.

77

78 **1. REMOVE THE CAP FROM THE MOUTHPIECE** (see Figure 1); the strap on the
79 cap will stay attached to the actuator. Inspect the inhaler mouthpiece for the presence of
80 foreign objects before each use, especially if the strap is no longer attached to the actuator
81 or if the cap is not being used to cover the mouthpiece. Make sure the canister is fully and
82 firmly inserted into the actuator. **SHAKE THE INHALER WELL** for 5 seconds
83 immediately before each use.



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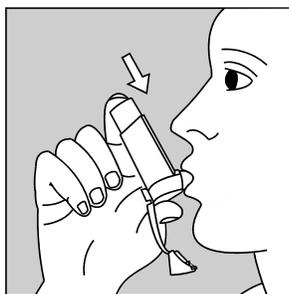
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Figure 1

87 **2. BREATHE OUT FULLY THROUGH YOUR MOUTH**, expelling as much air
88 from your lungs as possible. Place the mouthpiece fully into your mouth, holding the
89 inhaler with the mouthpiece down (see Figure 1) and closing your lips around it.

90 **3. WHILE BREATHING IN DEEPLY AND SLOWLY THROUGH YOUR**
91 **MOUTH, FULLY DEPRESS THE TOP OF THE METAL CANISTER** with your
92 index finger (see Figure 2). Immediately after the spray is delivered, release your finger
93 from the canister. When you have breathed in fully, remove the inhaler from your mouth,
94 and close your mouth.

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Figure 2

- 99 **4. HOLD YOUR BREATH AS LONG AS POSSIBLE**, or up to 10 seconds, then
100 breathe normally.
- 101 **5. WAIT ABOUT 30 SECONDS AND SHAKE** the inhaler again. Repeat steps 2
102 through 4.
- 103 **6. REPLACE THE MOUTHPIECE CAP AFTER EACH USE.**
- 104 **7.** After you finish taking your dose, rinse your mouth with water and spit it out. Do not
105 swallow.
- 106 **8.** Because of the difference in propellants, you may notice a slightly different taste or
107 feel of the spray in your mouth with FLOVENT HFA than you are used to with
108 FLOVENT[®] (fluticasone propionate) Inhalation Aerosol.
- 109 **9.** Never immerse the canister in water to determine the amount remaining in the canister
110 (“float test”).
- 111 **10. DISCARD THE INHALER AFTER YOU HAVE USED THE LABELED**
112 **NUMBER OF INHALATIONS.** The correct amount of medicine in each inhalation
113 cannot be assured after 60 inhalations from FLOVENT HFA 110 mcg 60-actuation
114 sample inhaler and after 120 inhalations from FLOVENT HFA 44 mcg, FLOVENT HFA
115 110 mcg, and FLOVENT HFA 220 mcg 120-actuation inhalers, even though the canister
116 is not completely empty and will continue to operate. The inhaler should be discarded
117 when the labeled number of inhalations have been used; therefore, it is recommended to
118 keep track of the number of actuations used from your inhaler. Before you reach the
119 labeled number of inhalations, however, you should consult your doctor to see if you
120 need to refill your prescription.
- 121 **DO NOT** use after the expiration date, shown as “EXP”, on the product label and box.

Cleaning Your FLOVENT HFA Inhalation Aerosol

- 122 Clean the inhaler at least once a week after the evening dose. Keeping the canister and
123 plastic actuator clean is important to prevent medicine build-up.
- 124
- 125 Step 1. Remove the mouthpiece cap but do not remove the canister from the plastic
126 actuator. The strap on the cap will stay attached to the actuator.
- 127 Step 2. Use a cotton swab dampened with water to clean the small circular opening where
128 the medicine is sprayed from the canister. Gently twist the swab in a circular motion to
129 remove any medicine (see Figure 3), then repeat with a clean, water-dampened swab to
130 remove any medicine still at the opening. Wipe the inside of the plastic actuator
131 mouthpiece with a clean tissue dampened with water and let the actuator air-dry
132 overnight.
- 133

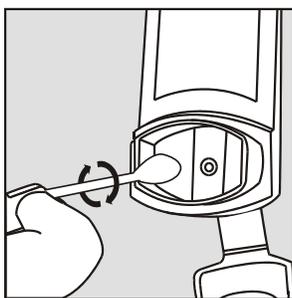


Figure 3

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Step 3. Replace the mouthpiece cover after the actuator has dried.

Storing Your FLOVENT HFA Inhalation Aerosol

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Store at room temperature with the mouthpiece down. Keep out of reach of children.

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Contents Under Pressure: Do not puncture. Do not use or store near heat or open flame. Exposure to temperatures above 120°F may cause bursting. Never throw into fire or incinerator.

Further Information

143
144
145

REMEMBER: This medicine has been prescribed for you by your doctor. DO NOT give this medicine to anyone else.

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Please note that the  symbol on each product box means that FLOVENT HFA Inhalation Aerosol does not contain chlorofluorocarbons (CFCs) as the propellant. Instead, the inhaler contains a hydrofluoroalkane (HFA-134a) as the propellant.

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This leaflet does not contain the complete information about your medication. *If you have any questions, or are not sure about something, then you should ask your doctor or pharmacist.*

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You may want to read this leaflet again. Please **DO NOT THROW IT AWAY** until you have finished your medicine.



GlaxoSmithKline
Research Triangle Park, NC 27709

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Month Year

(RL no.)