

# THE IMPORTANCE OF ADHERENCE IN CHRONIC GRANULOMATOUS DISEASE (CGD)



CASEY



BRANDEN

## INDICATIONS AND USAGE

ACTIMMUNE® (Interferon gamma-1b) is indicated:

- For reducing the frequency and severity of serious infections associated with Chronic Granulomatous Disease
- For delaying time to disease progression in patients with severe, malignant osteopetrosis

## SELECT IMPORTANT SAFETY INFORMATION

### CONTRAINDICATIONS

- In patients who develop or have known hypersensitivity to interferon-gamma, *E coli*-derived products, or any component of the product

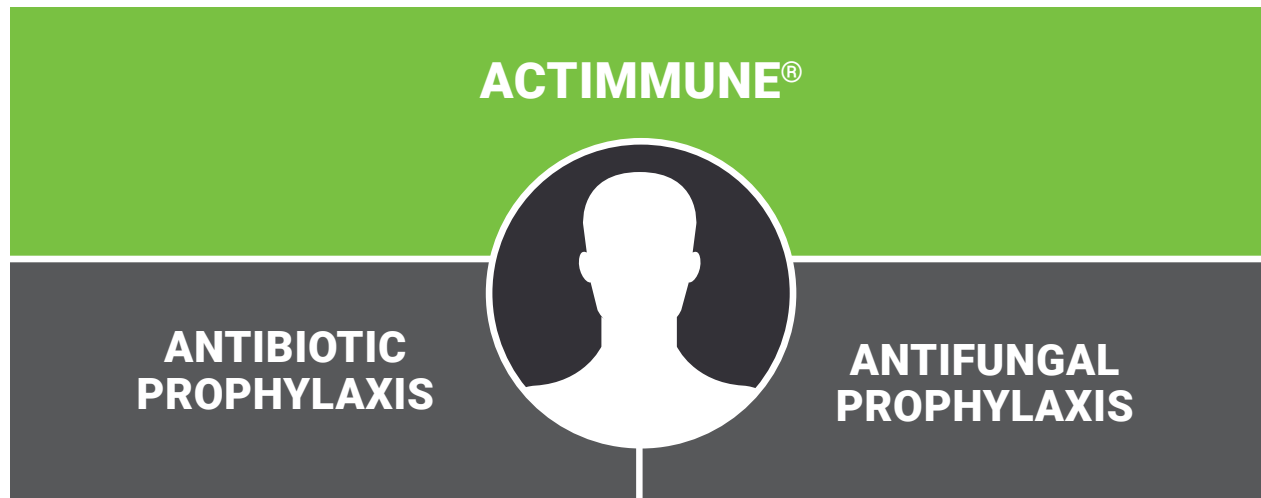
Please see Important Safety Information on page 8 and [click here](#) for ACTIMMUNE® Full Prescribing Information.

**ACTIMMUNE®**  
(Interferon gamma-1b)

ACTIMMUNE® is approved by the FDA specifically for patients with CGD. Learn more at [ACTIMMUNEhcp.com](http://ACTIMMUNEhcp.com).

# Triple prophylaxis is the standard of care

**ACTIMMUNE® (Interferon gamma-1b) is the only FDA-approved biologic therapy indicated for reducing the frequency and severity of serious infections\* associated with chronic granulomatous disease (CGD)<sup>1,2</sup>**



For the chronic medical management of CGD, combination immunomodulatory and antimicrobial prophylaxis therapy is recommended by the<sup>3,4</sup>:

- American Academy of Allergy, Asthma & Immunology (AAAAI)
- American College of Allergy, Asthma & Immunology (ACAAI)
- Immune Deficiency Foundation (IDF)

\*Serious infection is defined as a clinical event requiring hospitalization and intravenous antibiotics.

## SELECT IMPORTANT SAFETY INFORMATION

### WARNINGS AND PRECAUTIONS

- **ACTIMMUNE should be used with caution in patients with:**
  - Pre-existing cardiac conditions, including ischemia, congestive heart failure, or arrhythmia
  - Seizure disorders or compromised central nervous system function; reduce dose or discontinue

- Myelosuppression, or receiving other potentially myelosuppressive agents; consider dose reduction or discontinuation of therapy
- Severe renal insufficiency
- Age <1 year

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# Reduce the risk of serious infections for patients with CGD

In a clinical trial of patients with various types of CGD taking ACTIMMUNE® (Interferon gamma-1b) vs placebo, ACTIMMUNE® demonstrated a<sup>†,‡,1,2</sup>:

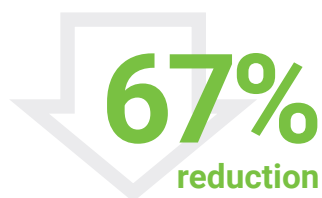
ACTIMMUNE® (n = 63)  
Placebo (n = 65)



in relative risk of serious infection\* ( $P = .0006$ )



in the total number and rate of serious infections, including recurrent infections ( $P < .0001$ )



in hospitalization days (497 days for those taking ACTIMMUNE® vs 1,493 days for those taking placebo) ( $P = .02$ )

\*Serious infection is defined as a clinical event requiring hospitalization and intravenous antibiotics.

<sup>†</sup>In subgroup analyses, ACTIMMUNE® was beneficial regardless of age or type of CGD inheritance.

<sup>‡</sup>More than 85% of patients were receiving prophylactic antibiotics in addition to either ACTIMMUNE® or placebo.

## SELECT IMPORTANT SAFETY INFORMATION

### WARNINGS AND PRECAUTIONS (CONT'D)

#### • Monitoring:

- Patients begun on ACTIMMUNE before age 1 year should receive monthly assessments of liver function. If severe hepatic enzyme elevations develop, ACTIMMUNE dosage should be modified
- Monitor renal function regularly when administering ACTIMMUNE in patients with severe renal insufficiency; accumulation of interferon gamma-1b may occur with repeated administration. Renal toxicity has been reported in patients receiving ACTIMMUNE

#### • Pregnancy, Lactation, and Fertility:

- ACTIMMUNE should be used during pregnancy only if the potential benefit outweighs the potential risk to the fetus
- Use of ACTIMMUNE by lactating mothers is not recommended. ACTIMMUNE or nursing should be discontinued dependent on the importance of the drug to the mother
- Long-term effects of ACTIMMUNE on fertility are not known

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# Finding success with adherence

## Branden

**Age at diagnosis:** 7 years

**CGD inheritance pattern:** X-linked

**Therapy:** ACTIMMUNE® (Interferon gamma-1b),  
trimethoprim-sulfamethoxazole, itraconazole

This case study is the experience of one individual and results may vary.

“When I came down with pneumonia in college, I realized that **2 minutes to give myself a shot isn’t such a big deal.**”

BRANDEN,  
lives with X-linked CGD

### SELECT IMPORTANT SAFETY INFORMATION

#### DRUG INTERACTIONS

- Concomitant use of drugs with neurotoxic, hematotoxic, or cardiotoxic effects may increase the toxicity of interferons

- Avoid simultaneous administration of ACTIMMUNE with other heterologous serum protein or immunological preparations (eg, vaccines)

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# Branden's case history

- 1988 Born; experienced recurrent pneumonia**
  - Tested for cystic fibrosis
- 1989 Cellulitis (foot)**
  - Caused by insect bite and resulted in 5-day hospitalization; treated with intravenous antibiotics
- 1990 to 1994 Recurrent pneumonia and staphylococcal infections (fingers)**
  - Tested for dwarfism and allergies
- 1995 Pneumonia**
  - Resulted in pleural effusion that was pressing on the heart; thoracentesis performed
  - 2-week hospitalization
- Diagnosed with CGD and started on ACTIMMUNE® (Interferon gamma-1b) and trimethoprim-sulfamethoxazole within 2 weeks**
- 1996 to 2002 Hospitalized intermittently for pneumonia**
  - Typically treated out of hospital because of doctors' responsiveness and aggressive approach. When needed, hospital stays ranged from 2 to 3 days
- 2006 Staphylococcal infection (lymph node)**
  - Required incision, drainage, and 1-week hospital stay
  - Received intravenous antibiotics from home for 2 additional weeks
- 2007 Stopped taking ACTIMMUNE® as prescribed when started college**
- 2009 Pneumonia**
  - Thought to be caused by *Aspergillus* species; resulted in 2-week hospitalization
- 2020 Taking medications as prescribed**
  - With continued adherence, Branden has not experienced a serious infection in 11 years

## SELECT IMPORTANT SAFETY INFORMATION

### ADVERSE REACTIONS

- The most common adverse experiences occurring with ACTIMMUNE therapy are "flu-like" symptoms such as fever, headache, chills, myalgia, or fatigue,

which may decrease in severity as treatment continues, and may be minimized by bedtime administration of ACTIMMUNE. Acetaminophen may be used to prevent or partially alleviate the fever and headache

**ACTIMMUNE**<sup>®</sup>  
(Interferon gamma-1b)

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# Journey to adherence after serious infection

## Casey

Age at diagnosis: 4 months

CGD inheritance pattern: X-linked

Therapy: ACTIMMUNE® (Interferon gamma-1b),  
trimethoprim-sulfamethoxazole, itraconazole

This case study is the experience of one individual and results may vary.

“Taking care of myself means that I take my medications as prescribed by my doctor. I want to do everything I can to avoid a serious infection.”

CASEY,  
lives with X-linked CGD

### SELECT IMPORTANT SAFETY INFORMATION

#### ADVERSE REACTIONS (CONT'D)

- Isolated cases of acute serious hypersensitivity reactions have been observed in patients receiving ACTIMMUNE
- Reversible neutropenia, thrombocytopenia, and elevations of AST and/or ALT have been observed during ACTIMMUNE therapy

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# Casey's case history

- 1994 Born; experienced multiple fevers and failure to thrive**  
**Diagnosed with CGD at age 4 months**
  - Started on various antibiotics
  - His grandmother, mother, and sister were tested and confirmed to be carriers
- 1998 Developed an *Aspergillus* lung infection after attending a rodeo**
  - Resulted in permanent 70% loss of lung function and long-term asthma requiring an inhaler and nebulizer
- ACTIMMUNE® (Interferon gamma-1b) added to treatment regimen**
- 2002 Liver abscess**
  - Liver stopped functioning and he was placed on life support
  - Experimental surgery was performed and was successful
- 2014 Stopped taking ACTIMMUNE® as prescribed during first year of college**
- 2015 Developed multiple brain abscesses caused by *Trichosporon inkin***
  - Underwent 4 consecutive brain surgeries; was in a coma for 3 days and in hospital for 4 months
  - Resulted in a titanium mesh plate being inserted in his head
  - Anti-seizure medication now required
- 2020 Taking medications as prescribed**
  - With continued adherence, Casey has not experienced a serious infection in 5 years

## SELECT IMPORTANT SAFETY INFORMATION

### ADVERSE REACTIONS (CONT'D)

- At doses 10 times greater than the weekly recommended dose, ACTIMMUNE may exacerbate pre-existing cardiac conditions, or may cause reversible neurological effects such as decreased mental status, gait disturbance, and dizziness

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- Isolated cases of acute serious hypersensitivity reactions have been observed in patients receiving ACTIMMUNE
- Reversible neutropenia, thrombocytopenia, and elevations of AST and/or ALT have been observed during ACTIMMUNE therapy
- At doses 10 times greater than the weekly recommended dose, ACTIMMUNE may exacerbate pre-existing cardiac conditions, or may cause reversible neurological effects such as decreased mental status, gait disturbance, and dizziness

Please [click here](#) for ACTIMMUNE® Full Prescribing Information.

**References:** 1. ACTIMMUNE (Interferon gamma-1b) [prescribing information] Horizon. 2. The International Chronic Granulomatous Disease Cooperative Study Group. A controlled trial of interferon gamma to prevent infection in chronic granulomatous disease. *N Engl J Med.* 1991;342(8):509-516. 3. Bonilla FA, Khan DA, Ballas ZK, et al. Practice parameter for the diagnosis and management of primary immunodeficiency. *J Allergy Clin Immunol.* 2015;136(5):1186-1205. 4. Leiding JW, Malech HL, Holland SM. Chronic granulomatous disease. *Clinical Focus on Primary Immunodeficiencies.* 2013;15:1-9.



Visit [ACTIMMUNEhcp.com](http://ACTIMMUNEhcp.com) to learn more about ACTIMMUNE®

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