



UTILIZATION MANAGEMENT MEDICAL POLICY

POLICY: Inflammatory Conditions – Ilaris Utilization Management Medical Policy

- Ilaris® (canakinumab subcutaneous injection – Novartis)

REVIEW DATE: 02/16/2022

OVERVIEW

Ilaris, an interleukin-1 β (IL-1 β) blocker, is indicated for the following autoinflammatory periodic fever syndromes:¹

- **Cryopyrin-Associated Periodic Syndromes (CAPS)**, including Familial Cold Autoinflammatory Syndrome and Muckle-Wells Syndrome, for treatment of patients who are ≥ 4 years of age.
- **Familial Mediterranean fever**, in adult and pediatric patients.
- **Hyperimmunoglobulin D syndrome/mevalonate kinase deficiency**, in adult and pediatric patients.
- **Still's disease**, including active **adult-onset Still's disease** and **systemic juvenile idiopathic arthritis (SJIA)**, in patients ≥ 2 years of age.
- **Tumor necrosis factor receptor associated periodic syndrome (TRAPS)**, in adult and pediatric patients.

In the pivotal study for period fevers, patients were required to be at least 2 years of age with a disease flare, defined as a C-reactive protein level ≥ 10 mg/L. Prior to starting Ilaris, a minimum level of disease activity at baseline was required for familial Mediterranean fever (at least one flare per month despite colchicine), hyperimmunoglobulin D syndrome/mevalonate kinase deficiency (\geq three febrile acute flares within the previous 6 month period), and TRAPS (\geq six flares per year). In this study, patients were assessed for a response following 4 months of treatment with Ilaris.

Guidelines

Ilaris is used for a variety of periodic fever syndromes and inflammatory conditions.

- **CAPS:** A consensus protocol for hereditary autoinflammatory syndromes (2020) lists Ilaris as a treatment option across the spectrum of CAPS.¹¹ Continuous therapy is recommended for severe, continuous disease. For those who do not achieve remission or minimal disease activity following 1 to 3 months of treatment, dose escalation or shortened dosing interval is among the treatment options. On-demand therapy is also a treatment option for those patients who have intermittent, mild disease with low disease activity.
- **Familial Mediterranean Fever:** Guidelines for familial Mediterranean fever from the European League Against Rheumatism (EULAR) [2016] note that treatment goals are to prevent the clinical attacks and to suppress chronic subclinical inflammation.⁶ IL-1 blockade is an option for patients with protracted febrile myalgia. In patients who develop amyloidosis, the maximal tolerated dose of colchicine and biologics (especially IL-1 blockade) are recommended.
- **Mevalonate Kinase Deficiency:** European guidelines for autoinflammatory disorders (2015) recommend consideration of short-term use of IL-1 blockers for termination of attacks and to limit or prevent steroid adverse events.⁵ Maintenance therapy with an IL-1 blocker may be used in patients with mevalonate kinase deficiency and frequent attacks and/or subclinical inflammation between attacks. A consensus protocol for hereditary autoinflammatory syndromes (2020) lists Ilaris as a treatment option across the spectrum of mevalonate kinase deficiency/hyperimmunoglobulin D syndrome.¹¹ Continuous therapy is recommended for severe, continuous disease. For those who do not achieve remission or minimal disease activity following

1 to 3 months of treatment, dose escalation or shortened dosing interval is among the treatment options. On-demand therapy is also a treatment option for those patients who have intermittent, mild disease.

- **SJIA:** There are standardized treatment plans published for use of Ilaris.^{7,8} At Month 3, patients with unchanged or worsening disease or patients whose steroid dose is > 50% of the starting dose should have an increase in prednisone plus either addition of methotrexate or change to Actemra. Guidelines from the American College of Rheumatology for the management of SJIA (2013) mention Ilaris as a treatment alternative, depending upon the manifestations of SJIA being treated.⁹ While there are a number of other effective options for treating synovitis in patients with active SJIA, effective options for treatment of macrophage activation syndrome are much more limited and include Kineret (anakinra subcutaneous injection), calcineurin inhibitors, and systemic corticosteroids (no preferential sequencing noted). Although use of Ilaris is uncertain in some situations, macrophage activation syndrome is a potentially life-threatening situation with limited treatment options.
- **TRAPS:** European guidelines for autoinflammatory disorders (2015) note that IL-1 blockade is beneficial for the majority of patients; maintenance with IL-1 blockade, which may limit corticosteroid exposure, may be used in patients with frequent attacks and/or subclinical inflammation between attacks. A consensus protocol for hereditary autoinflammatory syndromes (2020) lists Ilaris as a treatment option across the spectrum of TRAPS.¹¹ Continuous therapy is recommended for severe, continuous disease. For those who do not achieve remission or minimal disease activity following 1 to 3 months of treatment, dose escalation or shortened dosing interval is among the treatment options. On-demand therapy is also a treatment option for those patients who have intermittent, mild disease.

POLICY STATEMENT

Prior Authorization is recommended for medical benefit coverage of Ilaris. Approval is recommended for those who meet the **Criteria** and **Dosing** for the listed indications. Extended approvals are allowed if the patient continues to meet the criteria and dosing. Requests for doses outside of the established dosing documented in this policy will be considered on a case-by-case basis by a clinician (i.e., Medical Director or Pharmacist). All approvals are provided for the duration noted below. In cases where the approval is authorized in months, 1 month is equal to 30 days. Because of the specialized skills required for evaluation and diagnosis of patients treated with Ilaris, as well as the monitoring required for adverse events and long-term efficacy, initial approval requires Ilaris to be prescribed by or in consultation with a physician who specializes in the condition being treated.

All reviews for use of Ilaris for COVID-19 and/or cytokine release syndrome associated with COVID-19 will be forwarded to the Medical Director.

Automation: None.

RECOMMENDED AUTHORIZATION CRITERIA

Coverage of Ilaris is recommended in those who meet one of the following criteria:

FDA-Approved Indications

1. **Cryopyrin-Associated Periodic Syndromes (CAPS) [including Familial Cold Autoinflammatory Syndrome, Muckle-Wells Syndrome, and Neonatal Onset Multisystem Inflammatory Disease**

{NOMID} or Chronic Infantile Neurological Cutaneous and Articular {CINCA} Syndrome].

Approve for the duration noted if the patient meets ONE of the following (A or B):

A) Initial Therapy. Approve for 6 months if the patient meets the following conditions (i and ii):

- i. Patient is ≥ 4 years of age; AND
- ii. Ilaris is prescribed by or in consultation with a rheumatologist, geneticist, allergist/immunologist, or dermatologist.

B) Patient is Currently Receiving Ilaris. Approve for 1 year if the patient meets BOTH of the following (i and ii):

- i. Patient has been established on this medication for at least 6 months; AND
Note: A patient who has received < 6 months of therapy or who is restarting therapy with this medication is reviewed under criterion A (Initial Therapy).
- ii. Patient meets at least one of the following (a or b):
 - a) When assessed by at least one objective measure, patient experienced a beneficial clinical response from baseline (prior to initiating the requested drug); OR
Note: Examples of objective measures include resolution of fever, improvement in rash or skin manifestations, clinically significant improvement or normalization of serum markers (e.g., C-reactive protein, amyloid A), reduction in proteinuria, and/or stabilization of serum creatinine.
 - b) Compared with baseline (prior to initiating the requested drug), patient experienced an improvement in at least one symptom, such as fewer cold-induced attacks; less joint pain/tenderness, stiffness, or swelling; decreased fatigue; improved function or activities of daily living.

Dosing. Approve one of the following dosing regimens (A or B):

A) Patient is ≥ 15 kg and ≤ 40 kg: Approve up to 3 mg/kg per dose administered subcutaneously no more frequently than once every 8 weeks; OR

B) Patient is > 40 kg: Approve up to 150 mg per dose administered subcutaneously no more frequently than once every 8 weeks.

2. Familial Mediterranean Fever. Approve for the duration noted if the patient meets ONE of the following (A or B):

A) Initial Therapy. Approve for 6 months if the patient meets ALL of the following (i, ii, iii, iv, and v):

- i. Patient is ≥ 2 years of age; AND
- ii. Patient has tried colchicine, unless contraindicated; AND
- iii. Patient will be taking Ilaris in combination with colchicine, unless colchicine is contraindicated or not tolerated; AND
- iv. Prior to starting Ilaris, the patient meets both of the following (a and b):
 - a) C-reactive protein level is ≥ 10 mg/L OR elevated to at least two times the upper limit of normal for the reporting laboratory; AND
 - b) Patient has a history of at least one flare per month despite use of colchicine, OR was hospitalized for a severe flare; AND
- v. The medication is prescribed by or in consultation with a rheumatologist, nephrologist, geneticist, gastroenterologist, oncologist, or hematologist.

B) Patient is Currently Receiving Ilaris. Approve for 1 year if the patient meets BOTH of the following (i and ii):

- i. Patient has been established on this medication for at least 6 months; AND

Note: A patient who has received < 6 months of therapy or who is restarting therapy with this medication is reviewed under criterion A (Initial Therapy).

- ii. Patient meets at least one of the following (a or b):
 - a) When assessed by at least one objective measure, patient experienced a beneficial clinical response from baseline (prior to initiating the requested drug); OR
Note: Examples of objective measures include decreased frequency of attacks, resolution of fever, improvement in rash or skin manifestations, clinically significant improvement or normalization of serum markers (e.g., C-reactive protein, amyloid A), reduction in proteinuria, and/or stabilization of serum creatinine.
 - C) Compared with baseline (prior to initiating the requested drug), patient experienced an improvement in at least one symptom, such as decreased pain/tenderness, stiffness, or swelling; decreased fatigue; improved function or activities of daily living.

Dosing. Approve one of the following dosing regimens (A or B):

- A) Patient is ≤ 40 kg: Approve up to 4 mg/kg per dose administered subcutaneously no more frequently than once every 4 weeks; OR
- B) Patient is > 40 kg: Approve up to 300 mg per dose administered subcutaneously no more frequently than once every 4 weeks.

3. Hyperimmunoglobulin D Syndrome/Mevalonate Kinase Deficiency. Approve for the duration noted if the patient meets ONE of the following (A or B):

A) Initial Therapy. Approve for 6 months if the patient meets ALL of the following (i, ii, and iii):

- i. Patient is ≥ 2 years of age; AND
- ii. Prior to starting Ilaris, the patient meets both of the following (a and b):
 - a) C-reactive protein level is ≥ 10 mg/L OR elevated to at least two times the upper limit of normal for the reporting laboratory; AND
 - b) Patient has a history of at least three febrile acute flares within the previous 6-month period OR was hospitalized for a severe flare; AND
- iii. The medication is prescribed by or in consultation with a rheumatologist, nephrologist, geneticist, oncologist, or hematologist.

B) Patient is Currently Receiving Ilaris. Approve for 1 year if the patient meets BOTH of the following (i and ii):

- iii. Patient has been established on this medication for at least 6 months; AND
Note: A patient who has received < 6 months of therapy or who is restarting therapy with this medication is reviewed under criterion A (Initial Therapy).
- iv. Patient meets at least one of the following (a or b):
 - a) When assessed by at least one objective measure, patient experienced a beneficial clinical response from baseline (prior to initiating the requested drug); OR
Note: Examples of objective measures include decreased frequency of attacks, resolution of fever, improvement in rash or skin manifestations, clinically significant improvement or normalization of serum markers (e.g., C-reactive protein, amyloid A), reduction in proteinuria, and/or stabilization of serum creatinine.
 - b) Compared with baseline (prior to initiating the requested drug), patient experienced an improvement in at least one symptom, such as decreased pain/tenderness, stiffness, or swelling; decreased fatigue; improved function or activities of daily living.

Dosing. Approve one of the following dosing regimens (A or B):

- A) Patient is ≤ 40 kg: Approve up to 4 mg/kg per dose administered subcutaneously no more frequently than once every 4 weeks; OR

- B) Patient is > 40 kg:** Approve up to 300 mg per dose administered subcutaneously no more frequently than once every 4 weeks.

4. Stills Disease, Adult Onset. Approve for the duration noted if the patient meets ONE of the following (A or B):

- A) Initial Therapy.** Approve for 6 months (which is adequate for three doses) if the patient meets ALL of the following conditions (i, ii, and iii):

- i.** Patient is ≥ 18 years of age; AND

Note: If the patient is < 18 years of age, refer to criteria for systemic juvenile idiopathic arthritis.

- ii.** Patient meets ONE of the following conditions (a, b, or c):

- a)** Patient has tried at least TWO other biologics; OR

Note: Examples of biologics include Actemra (tocilizumab intravenous infusion, tocilizumab subcutaneous injection), Kineret (anakinra subcutaneous injection), Orencia (abatacept intravenous infusion, abatacept subcutaneous injection), an etanercept product, adalimumab product, or infliximab product.

- b)** Patient meets BOTH of the following [(1) and (2)]:

- (1)** Patient has features of poor prognosis, as determined by the prescriber; AND

Note: Examples of features of poor prognosis include arthritis of the hip, radiographic damage, 6-month duration of significant active systemic disease, defined by: fever, elevated inflammatory markers, or requirement for treatment with systemic glucocorticoids.

- (2)** Patient has tried Actemra or Kineret; OR

- c)** Patient meets BOTH of the following [(1) and (2)]:

- (1)** Patient has active systemic features with concerns of progression to macrophage activation syndrome, as determined by the prescriber; AND

- (2)** Patient has tried Kineret; AND

- iii.** Ilaris is prescribed by or in consultation with a rheumatologist.

- B) Patient is Currently Receiving Ilaris.** Approve for 1 year if the patient meets BOTH of the following (i and ii):

- i.** Patient has been established on this medication for at least 6 months; AND

Note: A patient who has received < 6 months of therapy or who is restarting therapy with this medication is reviewed under criterion A (Initial Therapy).

- ii.** Patient meets at least one of the following (a or b):

- a)** When assessed by at least one objective measure, patient experienced a beneficial clinical response from baseline (prior to initiating the requested drug); OR

Note: Examples of objective measures include resolution of fever, improvement in rash or skin manifestations, clinically significant improvement or normalization of serum markers (e.g., C-reactive protein, erythrocyte sedimentation rate), and/or reduced dosage of corticosteroids.

- b)** Compared with baseline (prior to initiating the requested drug), patient experienced an improvement in at least one symptom, such as less joint pain/tenderness, stiffness, or swelling; decreased fatigue; improved function or activities of daily living.

Dosing. Approve up to 4 mg/kg to a maximum of 300 mg per dose administered subcutaneously no more frequently than once every 4 weeks.

-
- 5. Systemic Juvenile Idiopathic Arthritis (SJIA).** Approve for the duration noted if the patient meets ONE of the following (A or B):
- A) Initial Therapy.** Approve for 6 months (which is adequate for three doses) if the patient meets ALL of the following conditions (i, ii, and iii):
- i.** Patient is ≥ 2 years of age; AND
 - ii.** Patient meets ONE of the following conditions (a, b, or c):
 - a)** Patient has tried at least TWO other biologics; OR
Note: Examples of biologics for SJIA include Actemra (tocilizumab intravenous infusion, tocilizumab subcutaneous injection), Kineret (anakinra subcutaneous injection), Orencia (abatacept intravenous infusion, abatacept subcutaneous injection), an etanercept product, adalimumab product, or infliximab product.
 - b)** Patient meets BOTH of the following [(1) and (2)]:
 - (1)** Patient has features of poor prognosis, as determined by the prescriber; AND
Note: Examples of features of poor prognosis include arthritis of the hip, radiographic damage, 6-month duration of significant active systemic disease, defined by: fever, elevated inflammatory markers, or requirement for treatment with systemic glucocorticoids.
 - (2)** Patient has tried Actemra or Kineret; OR
 - c)** Patient meets BOTH of the following [(1) and (2)]:
 - (1)** Patient has features of SJIA with active systemic features with concerns of progression to macrophage activation syndrome, as determined by the prescriber; AND
 - (2)** Patient has tried Kineret; AND
 - iii.** Ilaris is prescribed by or in consultation with a rheumatologist.
- B) Patient is Currently Receiving Ilaris.** Approve for 1 year if the patient meets BOTH of the following (i and ii):
- i.** Patient has been established on this medication for at least 6 months; AND
Note: A patient who has received < 6 months of therapy or who is restarting therapy with this medication is reviewed under criterion A (Initial Therapy).
 - ii.** Patient meets at least one of the following (a or b):
 - a)** When assessed by at least one objective measure, patient experienced a beneficial clinical response from baseline (prior to initiating the requested drug); OR
Note: Examples of objective measures include resolution of fever, improvement in rash or skin manifestations, clinically significant improvement or normalization of serum markers (e.g., C-reactive protein, erythrocyte sedimentation rate), and/or reduced dosage of corticosteroids.
 - b)** Compared with baseline (prior to initiating the requested drug), patient experienced an improvement in at least one symptom, such as less joint pain/tenderness, stiffness, or swelling; decreased fatigue; improved function or activities of daily living.

Dosing. Approve up to 4 mg/kg to a maximum of 300 mg per dose administered subcutaneously no more frequently than once every 4 weeks.

-
- 6. Tumor Necrosis Factor Receptor Associated Periodic Syndrome.** Approve for the duration noted if the patient meets ONE of the following (A or B):
- A) Initial Therapy.** Approve for 6 months if the patient meets ALL of the following (i, ii, and iii):
- i.** Patient is ≥ 2 years of age; AND
 - ii.** Prior to starting Ilaris, the patient meets both of the following (a and b):
 - a)** C-reactive protein level is ≥ 10 mg/L OR elevated to at least two times the upper limit of normal for the reporting laboratory; AND

REFERENCES

1. Ilaris® subcutaneous injection [prescribing information]. East Hanover, NJ: Novartis; September 2020.
2. Shinkai K, McCalmont TH, Leslie KS. Cryopyrin-associated periodic syndromes and autoinflammation. *Clin Exp Dermatol*. 2008;33:1-9.
3. Ozen S, Hoffman HM, Frenkel J, et al. Familial Mediterranean Fever (FMF) and beyond: a new horizon. Fourth International Congress on the Systemic Autoinflammatory Diseases held in Bethesda, USA; 6-10 November 2005. *Ann Rheum Dis*. 2006;65(7):961-964.
4. Genetics Home Reference. US National Library of Medicine. Available at: <https://ghr.nlm.nih.gov/>. Accessed on May 3, 2021. Search terms: TRAPS, familial Mediterranean fever, MKD.
5. ter Haar NM, Oswald M, Jeyaratnam J, et al. Recommendations for the management of autoinflammatory diseases. *Ann Rheum Dis*. 2015;74(9):1636-1644.
6. Ozen S, Demirkaya E, Erer B, et al. EULAR recommendations for the management of familial Mediterranean fever. *Ann Rheum Dis*. 2016;75(4):644-651.
7. Kimura Y, Morgan DeWitt E, Beukelman T, et al. Adding Canakinumab to the Childhood Arthritis and Rheumatology Research Alliance Consensus Treatment Plans for Systemic Juvenile Idiopathic Arthritis: comment on the article by DeWitt et al. *Arthritis Care Res (Hoboken)*. 2014;66(9):1430-1431.
8. DeWitt EM, Kimura Y, Beukelman T, et al. Consensus treatment plans for new-onset systemic juvenile idiopathic arthritis. *Arthritis Care Res (Hoboken)*. 2012;64(7):1001-1010.
9. Ringold S, Weiss PF, Beukelman T, et al. 2013 update of the 2011 American College of Rheumatology recommendations for the treatment of juvenile idiopathic arthritis: recommendations for the medical therapy of children with systemic juvenile idiopathic arthritis and tuberculosis screening among children receiving biologic medications. *Arthritis Rheum*. 2013;65(10):2499-2512.
10. Alten R, Gomez-Reino J, Durez P, et al. Efficacy and safety of the human anti-IL-1β monoclonal antibody canakinumab in rheumatoid arthritis: results of a 12-week, Phase II, dose-finding study. *BMC Musculoskelet Disord*. 2011;12:153.
11. Hansmann S, Lainka E, Horneff G, et al. Consensus protocols for the diagnosis and management of the hereditary autoinflammatory syndromes CAPS, TRAPS and MKD/HIDS: a German PRO-KIND initiative. *Pediatr Rheumatol Online J*. 2020;18(1):17.

HISTORY

Type of Revision	Summary of Changes	Review Date
Annual Revision	<p>Cryopyrin-Associated Periodic Syndromes (including Familial Cold Autoinflammatory Syndrome, Muckle-Wells Syndrome, and Neonatal Onset Multisystem Inflammatory Disease or Chronic Infantile Neurological Cutaneous and Articular Syndrome): The dosing was clarified to specify the dose is administered subcutaneously.</p> <p>Familial Mediterranean Fever: To align with the pivotal study design, the following requirements were added for initial therapy: an age requirement ≥ 2 years of age; a previous trial and concomitant use with colchicine, unless contraindicated or not tolerated; a minimum requirement for elevation in C-reactive protein level; and a history of at least one flare per month despite colchicine, unless the patient was previously hospitalized for a severe flare. For a patient who is currently receiving Ilaris, a response to therapy was clarified to require a reduction in the frequency and/or severity of attacks; previously, a response to therapy was not defined and was determined by the prescriber. Additionally, the dosing was clarified to specify the dose is administered subcutaneously.</p> <p>Hyperimmunoglobulin D Syndrome/Mevalonate Kinase Deficiency: To align with the pivotal study design, the following requirements were added for initial therapy: an age requirement ≥ 2 years of age; a minimum requirement for elevation in C-reactive protein level; and a history of at least three flares within the previous 6 months, unless the patient was previously hospitalized for a severe flare. For a patient who is currently receiving Ilaris, a response to therapy was clarified to require a reduction in the frequency and/or severity of attacks; previously, a response to therapy was not defined and was determined by the prescriber. Additionally, the dosing was clarified to specify the dose is administered subcutaneously.</p> <p>Systemic Juvenile Idiopathic Arthritis: The dosing was clarified to specify the dose is administered subcutaneously.</p> <p>Stills Disease, Adult Onset: The dosing was clarified to specify the dose is administered subcutaneously.</p>	05/26/2021

	<p>Tumor Necrosis Factor Receptor Associated Periodic Syndrome: To align with the pivotal study design, the following requirements were added for initial therapy: an age requirement ≥ 2 years of age; a minimum requirement for elevation in C-reactive protein level; and a history of at least six flares per year, unless the patient was previously hospitalized for a severe flare. For a patient who is currently receiving Ilaris, a response to therapy was clarified to require a reduction in the frequency and/or severity of attacks; previously, a response to therapy was not defined and was determined by the prescriber. Additionally, the dosing was clarified to specify the dose is administered subcutaneously.</p>	
<p>Early Annual Revision</p>	<p>Cryopyrin-Associated Periodic Syndromes (including Familial Cold Autoinflammatory Syndrome, Muckle-Wells Syndrome, and Neonatal Onset Multisystem Inflammatory Disease or Chronic Infantile Neurological Cutaneous and Articular Syndrome): Initial approval duration was changed to 6 months (previously was 3 months). For a patient currently receiving, it was clarified that this applies to a patient who is receiving for ≥ 6 months. A requirement was added for a patient who is currently receiving to have at least one objective or subjective response to therapy. Previously, response was more general and according to the prescriber.</p> <p>Familial Mediterranean Fever: Initial approval duration was changed to 6 months (previously was 3 months). For a patient currently receiving, it was clarified that this applies to a patient who is receiving for ≥ 6 months. A requirement was added for a patient who is currently receiving to have at least one objective or subjective response to therapy. Previously, response was more general and according to the prescriber.</p> <p>Hyperimmunoglobulin D Syndrome/Mevalonate Kinase Deficiency: Initial approval duration was changed to 6 months (previously was 3 months). For a patient currently receiving, it was clarified that this applies to a patient who is receiving for ≥ 6 months. A requirement was added for a patient who is currently receiving to have at least one objective or subjective response to therapy. Previously, response was more general and according to the prescriber.</p> <p>Stills Disease, Adult Onset: Initial approval duration was changed to 6 months (previously was 3 months). For a patient currently receiving, it was clarified that this applies to a patient who is receiving for ≥ 6 months. A requirement was added for a patient who is currently receiving to have at least one objective or subjective response to therapy. Previously, response was more general and according to the prescriber.</p> <p>Systemic Juvenile Idiopathic Arthritis: Initial approval duration was changed to 6 months (previously was 3 months). For a patient currently receiving, it was clarified that this applies to a patient who is receiving for ≥ 6 months. A requirement was added for a patient who is currently receiving to have at least one objective or subjective response to therapy. Previously, response was more general and according to the prescriber.</p> <p>Tumor Necrosis Factor Receptor Associated Periodic Syndrome: Initial approval duration was changed to 6 months (previously was 3 months). For a patient currently receiving, it was clarified that this applies to a patient who is receiving for ≥ 6 months. A requirement was added for a patient who is currently receiving to have at least one objective or subjective response to therapy. Previously, response was more general and according to the prescriber.</p>	<p>02/16/2022</p>

APPENDIX

	Mechanism of Action	Examples of Inflammatory Indications*
Biologics		
Adalimumab SC Products (Humira [®] , biosimilars)	Inhibition of TNF	AS, CD, JIA, PsO, PsA, RA, UC
Cimzia[®] (certolizumab pegol SC injection)	Inhibition of TNF	AS, CD, nr-axSpA, PsO, PsA, RA
Etanercept SC Products (Enbrel [®] , biosimilars)	Inhibition of TNF	AS, JIA, PsO, PsA
Infliximab IV Products (Remicade [®] , biosimilars)	Inhibition of TNF	AS, CD, PsO, PsA, RA, UC
Simponi[®], Simponi[®] Aria[™] (golimumab SC injection, golimumab IV infusion)	Inhibition of TNF	SC formulation: AS, PsA, RA, UC
		IV formulation: AS, PJIA, PsA, RA
Actemra[®] (tocilizumab IV infusion, tocilizumab SC injection)	Inhibition of IL-6	SC formulation: PJIA, RA, SJIA
		IV formulation: PJIA, RA, SJIA
Kevzara[®] (sarilumab SC injection)	Inhibition of IL-6	RA
Orencia[®] (abatacept IV infusion, abatacept SC injection)	T-cell costimulation modulator	SC formulation: JIA, PsA, RA
		IV formulation: JIA, PsA, RA
Rituximab IV Products (Rituxan [®] , biosimilars)	CD20-directed cytolytic antibody	RA
Kineret[®] (anakinra SC injection)	Inhibition of IL-1	JIA [^] , RA
Stelara[®] (ustekinumab SC injection, ustekinumab IV infusion)	Inhibition of IL-12/23	SC formulation: CD, PsO, PsA, UC
		IV formulation: CD, UC
Siliq[™] (brodalumab SC injection)	Inhibition of IL-17	PsO
Cosentyx[®] (secukinumab SC injection)	Inhibition of IL-17A	AS, ERA, nr-axSpA, PsO, PsA
Taltz[®] (ixekizumab SC injection)	Inhibition of IL-17A	AS, nr-axSpA, PsO, PsA
Ilumya[™] (tildrakizumab-asnm SC injection)	Inhibition of IL-23	PsO
Skyrizi[®] (risankizumab-rzaa SC injection)	Inhibition of IL-23	PsA, PsO
Tremfya[™] (guselkumab SC injection)	Inhibition of IL-23	PsO
Entyvio[™] (vedolizumab IV infusion)	Integrin receptor antagonist	CD, UC

* Not an all-inclusive list of indication (e.g., oncology indications and rare inflammatory conditions are not listed). Refer to the prescribing information for the respective agent for FDA-approved indications; SC – Subcutaneous; TNF – Tumor necrosis factor; AS – Ankylosing spondylitis; CD – Crohn’s disease; JIA – Juvenile idiopathic arthritis; PsO – Plaque psoriasis; PsA – Psoriatic arthritis; RA – Rheumatoid arthritis; UC – Ulcerative colitis; nr-axSpA – Non-radiographic axial spondyloarthritis; IV – Intravenous, PJIA – Polyarticular juvenile idiopathic arthritis; IL – Interleukin; SJIA – Systemic juvenile idiopathic arthritis; [^] Off-label use of Kineret in JIA supported in guidelines; ERA – Enthesitis-related arthritis.