

## Regimen Monograph

[Regimen Name](#) | [Drug Regimen](#) | [Cycle Frequency](#) | [Premedication and Supportive Measures](#) | [Dose Modifications](#) | [Adverse Effects](#) | [Interactions](#) | [Drug Administration and Special Precautions](#) | [Recommended Clinical Monitoring](#) | [Administrative Information](#) | [References](#) | [Other Notes](#) | [Disclaimer](#)

## A - Regimen Name

# CAPE Regimen

Capecitabine

**Disease Site** Breast

**Intent** Palliative

**Regimen Category** **Evidence-Informed :**

Regimen is considered appropriate as part of the standard care of patients; meaningfully improves outcomes (survival, quality of life), tolerability or costs compared to alternatives (recommended by the Disease Site Team and national consensus body e.g. pan-Canadian Oncology Drug Review, pCODR). Recommendation is based on an appropriately conducted phase III clinical trial relevant to the Canadian context OR (where phase III trials are not feasible) an appropriately sized phase II trial. Regimens where one or more drugs are not approved by Health Canada for any indication will be identified under Rationale and Use.

**Rationale and Uses** For the treatment of advanced breast cancer patients who have had prior taxanes (or patients with contraindications to taxanes).

**Supplementary Public Funding** [capecitabine](#)  
ODB - General Benefit (capecitabine) ([ODB Formulary](#))

[back to top](#)

**B - Drug Regimen****Standard schedule:**

[capecitabine](#) 1000 to 1250\* mg PO BID Days 1 to 14  
/m<sup>2</sup>

**Alternative schedule:**

[capecitabine](#) 1000 to 1250\* mg PO BID Days 1 to 7  
/m<sup>2</sup>

(\*May use 1000 mg/m<sup>2</sup> BID Days 1 to 14 in heavily pretreated patients. Health Canada approved dose is 1250 mg/m<sup>2</sup> BID Days 1 to 14.)

[back to top](#)

**C - Cycle Frequency**

**Standard (2 week) schedule: REPEAT EVERY 21 DAYS**

**Alternative (1 week) schedule: REPEAT EVERY 14 DAYS**

until evidence of disease progression, or limited by drug toxicity

[back to top](#)

**D - Premedication and Supportive Measures**

**Antiemetic Regimen:** Low – No routine prophylaxis; PRN recommended

**Other Supportive Care:**

- Topical emollients (e.g. hand creams, udder balm) may ameliorate the manifestations of hand-foot syndrome in patients receiving capecitabine.
- Standard antidiarrheal agents (eg. loperamide) should be initiated as medically appropriate, as early as possible.

Also refer to [CCO Antiemetic Recommendations](#).

[back to top](#)

## E - Dose Modifications

Doses should be modified according to the protocol by which the patient is being treated.

Patients should be tested for DPD deficiency before starting treatment with capecitabine. Refer to the [DPD Deficiency Guidance for Clinicians](#) for more information.

In patients with unrecognized DPD deficiency, acute, life-threatening toxicity may occur; if acute grade 2-4 toxicity develops, treatment should be stopped immediately and permanent discontinuation considered based on clinical assessment of the toxicities.

### **Dosage with toxicity**

Patients with baseline neutrophil counts of  $<1.5 \times 10^9/L$  and/or thrombocyte counts of  $<100 \times 10^9/L$  should not receive capecitabine therapy.

Patients should be informed of the need to interrupt treatment immediately if moderate or severe toxicity occurs. Supportive care should be provided, including loperamide for diarrhea.

Doses should not be re-escalated if reduced for toxicity. Missed or omitted doses of capecitabine should not be replaced.

Dose modifications are mandatory for gastrointestinal, dermatological toxicity, neurotoxicity and hyperbilirubinemia. Practitioner may elect not to reduce dose for other toxicities unlikely to become serious or life-threatening.

### **Non-hematologic Toxicity:**

Toxicity	Action During a Course of Therapy	Dose Adjustment for Next Cycle (% of starting dose)
Grade 1	Maintain dose level	Maintain dose level
Grade 2		
1st appearance	Hold until resolved to $\leq$ grade 1	100%
2nd appearance	Hold until resolved to $\leq$ grade 1	75%
3rd appearance	Hold until resolved to $\leq$ grade 1	50%
4th appearance	Discontinue treatment permanently	Not applicable

Grade 3		
1st appearance	Hold until resolved to $\leq$ grade 1	75%
2nd appearance	Hold until resolved to $\leq$ grade 1	50%
3rd appearance, OR any evidence of Stevens-Johnson syndrome or Toxic epidermal necrolysis	Discontinue treatment permanently	Not applicable
Grade 4		
1 <sup>st</sup> appearance, including SJS or TEN, OR cardiotoxicity OR acute renal failure	Discontinue permanently OR If physician deems it to be in the patient's best interest to continue and no evidence of Stevens-Johnson syndrome or toxic epidermal necrolysis, interrupt until resolved to $\leq$ grade 1.	Discontinue OR 50%
2 <sup>nd</sup> appearance OR any occurrence of confirmed leukoencephalopathy	Discontinue permanently	Not applicable

**Hematologic Toxicity:**

Hold capecitabine during a treatment cycle in the presence of grade 3 or 4 hematologic toxicity.

**Hepatic Impairment**

Hepatic impairment	Capecitabine Dose
Mild to moderate impairment	No starting dose adjustment necessary
Severe	No data, has not been studied

---

**Renal Impairment**

Moderate renal impairment results in an increase in severe toxicity.

<b>Creatinine Clearance (mL/min)</b>	<b>% of Starting Dose</b>
51 - 80	100 % with close monitoring
30 - 50	75 % (use with caution)
<30	discontinue

**Dosage in the Elderly**

No dose adjustment for the starting dose is required but patients should be closely monitored. Older patients ( $\geq 65$  years) are more susceptible to the effects of fluoropyrimidine-based therapies with increased grade 3/4 adverse effects, especially when used in combination.

[back to top](#)

**F - Adverse Effects**

Refer to [capecitabine](#) drug monograph(s) for additional details of adverse effects.

Very common (≥ 50%)	Common (25-49%)	Less common (10-24%)	Uncommon (< 10%), but may be severe or life-threatening
<ul style="list-style-type: none"> <li>Palmar-plantar erythrodysesthesia syndrome (PPES) (may be severe)</li> </ul>	<ul style="list-style-type: none"> <li>Diarrhea (may be severe)</li> <li>Nausea, vomiting</li> </ul>	<ul style="list-style-type: none"> <li>Mucositis</li> <li>↑ Bilirubin (may be severe)</li> <li>Fatigue</li> <li>Abdominal pain</li> </ul>	<ul style="list-style-type: none"> <li>Cardiotoxicity</li> <li>Arterial / Venous thromboembolism</li> <li>Hypersensitivity</li> <li>Myelosuppression +/- infection, bleeding</li> <li>Leukoencephalopathy</li> <li>GI perforation / obstruction</li> <li>Nephrotoxicity</li> <li>Hepatic failure</li> <li>Idiopathic thrombocytopenic purpura</li> <li>Eye disorders</li> <li>Dehydration</li> <li>Rash</li> </ul>

[back to top](#)

**G - Interactions**

Refer to [capecitabine](#) drug monograph(s) for additional details.

- Concomitant use with sorivudine or analogues is contraindicated, given the increased risk of capecitabine toxicity (may be fatal). Wait at least 4 weeks after sorivudine (or chemically related analogues) treatment before starting capecitabine.
- Avoid concomitant administration with phenytoin as capecitabine may increase phenytoin levels.
- Caution and monitor with the coadministration of leucovorin as this may increase capecitabine toxicity.

- 
- Caution and monitor PT/INR when administered with warfarin; capecitabine increases warfarin exposure.
  - Caution with the use of proton pump inhibitors and monitor for reduced effectiveness of capecitabine; consider switching to a magnesium and aluminum hydroxide-containing antacid.

[back to top](#)

## H - Drug Administration and Special Precautions

Refer to [capecitabine](#) drug monograph(s) for additional details.

### **Administration:**

- Oral self-administration; drug available by outpatient prescription.
- Doses are given orally approximately 12 hours apart, within 30 minutes after the end of a meal.
- Swallow tablets whole; do not crush or cut tablets.
- If a capecitabine dose is missed, skip this and give the next dose at the usual time. Missed or omitted doses should not be replaced.
- Store tablets at 15°C to 30°C in the original package.

### **Contraindications:**

- Patients who have a known hypersensitivity to capecitabine, its excipients, 5-fluorouracil or any ingredient in the formulation or component of the container.
- Patients with severe renal impairment (CrCl <30 mL/min).
- Patients with known near or complete absence of DPD (dihydropyrimidine dehydrogenase) activity. Refer to the [DPD Deficiency Guidance for Clinicians](#) for more information.
- Concomitant use with sorivudine or related analogues (i.e. brivudine), given potential fatal drug interaction.

### **Other Warnings/Precautions:**

- Contains lactose and should not be used in patients with hereditary galactose/glucose/lactase disorders.
- Use with caution in patients with risk factors for dehydration, pre-existing renal dysfunction or on nephrotoxic agents.

- Use with caution in patients with a history of cardiovascular disease as well as patients taking anticoagulants such as warfarin.
- Patients with partial DPD deficiency - use with extreme caution. Refer to the [DPD Deficiency Guidance for Clinicians](#) for more information.

### **Pregnancy/Lactation:**

- Capecitabine is not recommended for use in pregnancy. Adequate contraception should be used by both sexes during treatment, and for at least **6 months** after the last dose.
- Breastfeeding is not recommended.
  - Due to the potential for serious adverse reactions in the breastfed infant, breast-feeding is not recommended during treatment and for **2 weeks** after the last dose.
- Fertility effects: Probable

[back to top](#)

## **I - Recommended Clinical Monitoring**

Treating physicians may decide to monitor more or less frequently for individual patients but should always consider recommendations from the product monograph.

### **Recommended Clinical Monitoring**

- CBC; Baseline and at each visit
- Renal function tests; Baseline and as clinically indicated
- INR and/or PT; Baseline and as clinically indicated if patient is on anticoagulants
- Clinical toxicity assessment for diarrhea, dehydration, infection, stomatitis, rash or hand-foot syndrome, cardiac, hepatic and neurotoxicity; At each visit
- Grade toxicity using the current [NCI-CTCAE \(Common Terminology Criteria for Adverse Events\) version](#)

### **Suggested Clinical Monitoring**

- Liver function tests; Baseline and as clinically indicated (if severe organ failure suspected)



---

[back to top](#)

## J - Administrative Information

Outpatient prescription for home administration

[back to top](#)

## K - References

Bajetta E, Procopio G, Celio L, et al. Safety and efficacy of two different doses of capecitabine in the treatment of advanced breast cancer in older women. JCO 2005; 23: 2155-61.

Blum JL, Jones SE, Buzdar AU, et al. Multicenter phase II study of capecitabine in paclitaxel-refractory metastatic breast cancer. J Clin Oncol 1999; 17:485-93.

Capecitabine drug monograph, Cancer Care Ontario.

Rossi D, Alessandroni P, Catalano V, et al. Safety profile and activity of lower capecitabine dose in patients with metastatic breast cancer. Clin Breast Cancer 2007; 7(11): 857-60.

Tomiak E, Verma S, Levine M, et al. Use of Capecitabine in Stage IV breast cancer. An evidence summary. Current Oncology 2000; 7(2): 84-90.

**April 2023** Updated DPD deficiency information in the Dose Modifications and Special Precautions sections

[back to top](#)

## M - Disclaimer

### **Regimen Abstracts**

*A Regimen Abstract is an abbreviated version of a Regimen Monograph and contains only top level information on usage, dosing, schedule, cycle length and special notes (if available). It is intended for healthcare providers and is to be used for informational purposes only. It is not intended to constitute or be a substitute for medical advice, and all uses of the Regimen Abstract are subject to clinical judgment. Such information is provided on an “as-is” basis, without any representation, warranty, or condition, whether express, or implied, statutory or otherwise, as to the information’s quality, accuracy, currency, completeness, or reliability, and Cancer Care Ontario disclaims all liability for the use of this information, and for any claims, actions, demands or suits that arise from such use.*

---

*Information in regimen abstracts is accurate to the extent of the ST-QBP regimen master listings, and has not undergone the full review process of a regimen monograph. Full regimen monographs will be published for each ST-QBP regimen as they are developed.*

### **Regimen Monographs**

Refer to the [New Drug Funding Program](#) or [Ontario Public Drug Programs](#) websites for the most up-to-date public funding information.

*The information set out in the drug monographs, regimen monographs, appendices and symptom management information (for health professionals) contained in the Drug Formulary (the "Formulary") is intended for healthcare providers and is to be used for informational purposes only. The information is not intended to cover all possible uses, directions, precautions, drug interactions or adverse effects of a particular drug, nor should it be construed to indicate that use of a particular drug is safe, appropriate or effective for a given condition. The information in the Formulary is not intended to constitute or be a substitute for medical advice and should not be relied upon in any such regard. All uses of the Formulary are subject to clinical judgment and actual prescribing patterns may not follow the information provided in the Formulary.*

*The format and content of the drug monographs, regimen monographs, appendices and symptom management information contained in the Formulary will change as they are reviewed and revised on a periodic basis. The date of last revision will be visible on each page of the monograph and regimen. Since standards of usage are constantly evolving, it is advised that the Formulary not be used as the sole source of information. It is strongly recommended that original references or product monograph be consulted prior to using a chemotherapy regimen for the first time.*

*Some Formulary documents, such as the medication information sheets, regimen information sheets and symptom management information (for patients), are intended for patients. Patients should always consult with their healthcare provider if they have questions regarding any information set out in the Formulary documents.*

*While care has been taken in the preparation of the information contained in the Formulary, such information is provided on an "as-is" basis, without any representation, warranty, or condition, whether express, or implied, statutory or otherwise, as to the information's quality, accuracy, currency, completeness, or reliability.*

*CCO and the Formulary's content providers shall have no liability, whether direct, indirect, consequential, contingent, special, or incidental, related to or arising from the information in the Formulary or its use thereof, whether based on breach of contract or tort (including negligence), and even if advised of the possibility thereof. Anyone using the information in the Formulary does so at his or her own risk, and by using such information, agrees to indemnify CCO and its content providers from any and all liability, loss, damages, costs and expenses (including legal fees and expenses) arising from such person's use of the information in the Formulary.*

[back to top](#)